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SOCIAL MEDICINE.¹

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THERE seems to be considerable doubt as to the real meaning of the term "social medicine". To some it suggests the study of the so-called "social diseases"—that is, venereal diseases; some extend the term to include tuberculosis; some expand it to include all industrial and occupational diseases; at the other end of the scale are those who regard it as a term related to projects for the socialization of the medical profession. Some have made it wide enough to include almost a new philosophy of life; others have reduced it to the humble status of "preventive medicine", that term being used in the restricted sense in which it is popularly employed.

The editor of the journal *The Medical Officer* probably gave the best definition of social medicine when he made the following statement:

It seeks to explore all human activities with a view to finding out which are salutary and which are the reverse—using medicine as the yardstick, and to seek the furtherance of the former and the suppression of the latter; in other words, treating all that appertain to man as physiological or pathological agents.

There are two other appropriate extracts that I should like to quote. Lord Dawson of Penn, in a brief address upon his assumption of the presidency of the British Medical Association in England on September 22, 1943, said:

Medicine does not stand alone; it stands in relation to the whole social organism. . . . The progressive quickening of the social conscience is an outstanding

feature of this century, and it has found expression in the humanizing of industry, and in a body of social effort without precedent and a body of legislation to improve the health and welfare of the people. But if we pause to inquire whether the achievements of social reform between the last war and this, as judged by the removal of social inequalities and the establishment of social justice, were effective, our answer would have to be in the negative. I need but instance housing, social security, medical services and education; there has been and there still is a sense of frustration in the community. To focus on our special concern, is it not a reproach in view of the way medical knowledge has marched ahead, that a corresponding health and medical service has not been rendered available to all citizens long ere this?

Dr. John Kershaw put the matter equally bluntly, when he made the following statement:

The life of the common man in the twentieth century has, so far, been a thing of which humanity has had every reason to be ashamed. His day, at best, has been made up of eight or more hours of work, to which he was driven by necessity, and not led by inclination; ten or more hours of rest and essential physical and physiological activity, and a few brief hours of crude, emotional escape from reality in the cinema, at the dog-track, through alcohol, or in some similar fashion. . . . The choice that faces medicine is quite plain. Is it to continue to render crude first aid to the victims of capricious circumstance, or is it to take the more adventurous course of endeavouring to influence circumstances?

Social medicine in this sense is truly expressive of a completely new approach to the whole subject of medical care, and includes all its aspects; or, if you like to put it another way, the study and practice of present-day medicine must direct equal attention to the medical, the surgical and the social aspects. Moreover, the importance of this new approach is recognized by the establishment of the first professorship of social medicine in England at the University of Oxford in 1943. As you will recall, the University of Queensland had the honour of establishing the first professorship in Australia in 1937.

¹ Read at a meeting of the Queensland Branch of the British Medical Association on October 6, 1944.

Equally significant is the fact that in July, 1942, the British Medical Association in England set down the aim of medicine as being "to provide a system of medical service directed towards the achievement of positive health, of the prevention of disease, and the relief of sickness". The relief of sickness is essentially the medicine and surgery of routine practice. The promotion of health and the prevention of disease are both deliberately and directly related to the influence that the individual has upon his circumstances and his associations, and they upon him.

In the plan of the British Medical Association curative medicine is set only third. But it will be obvious at once that the institution of the whole three as practical objectives would require a fundamental change in the practice of medicine as we know it, and probably also in the methods of control of practice and in the methods of payment for medical services.

Under the existing system of competitive practice, the deliberate promotion of health and the prevention of disease—the basis of "positive health" as the present-day objective is called—must depend for their acceptance among the medical profession upon the degree to which governments are prepared to expend money to pay for them and for their acceptance by the public upon a costly process of public education in the principles of health, hygiene and genetics, based on facts established scientifically and constantly extended and clarified by research. It would appear, therefore, that there must be increasing State intervention both in medical practice and for the provision of funds.

There have been four great stages in the programme of State activity in respect of health. The first was the period when governments sporadically attacked violent epidemic diseases, if they reached the stage of producing popular alarm or of representing a public menace. This may be termed the "plague-scared" period. A century ago, there was a marked increase of public consciousness and revulsion against dirt, and this culminated in the most active endeavours to clean up water supplies, remove rubbish, drain away surface filth and otherwise do whatever was necessary to protect the public against the dirt, the foul air, and the marsh waters that were popularly supposed to carry within them the *materies morbi*. In this period the State reacted to the fact that the public and the medical profession had become "drain conscious". Meanwhile, as early as the reign of Elizabeth and as late as the early years of the present century, we had been "pauper-provident" in a canny sort of way. The dissolute, the distempered, the destitute and the degenerate had been swept up into the few "poor law hospitals" that were built to provide attention for those who might otherwise die in the ditches. Few they were indeed. In Anne's reign (1702-1714) it is said that there were no more than seven public hospitals in the whole of England. The "means test" (I personally consider it the most humiliating and degrading feature of social commercialism, making medical provision in that sense a State dole, penalizing the thrifty and also sensitive people who have fallen on hard times) still remains to indicate that public hospitals were intended originally to separate the indigent sick from the society of their fellows, whom their ills might otherwise contaminate. During the last sixty years—in fact, since the "germ theory of disease" first overshadowed every other aspect of medicine—there has been a gradual tendency for the revision of the public health programme, so that it may revolve and include again all those aspects mentioned in the extract from the writings of Kershaw which I quoted just now. So began the period of "social medicine".

The English Royal Commission of 1869 set down in 1871 what were regarded as the sanitary needs of a civilized community. They were no more than: (i) the supply of wholesome and sufficient water for drinking and washing; (ii) the prevention of the pollution of water; (iii) the provision of sewerage and utilization of sewage; (iv) the regulation of streets, highways and new buildings; (v) the healthiness of dwellings; (vi) the removal of nuisances and refuse and the consumption of smoke; (vii) the inspection of foods; (viii) the suppression of causes of diseases and regulation in cases of epidemics; (ix) the

provision for the burial of the dead without injury to the living; (x) the regulation of markets *et cetera* and the public lighting of towns.

Winslow, defining the social and scientific concept of public health practice as it began to be understood twenty years ago, expressed it as follows:

Public health is the science and art of preventing disease and promoting physical health and efficiency through organized community efforts for: (i) the sanitation of the environment; (ii) the control of community infections; (iii) the education of the individual in the principles of personal hygiene; (iv) the organization of medical and nursing services for the early diagnosis and preventive treatment of disease; and (v) the development of social machinery which will ensure to every individual a standard of living adequate for the maintenance of health.

The essential difference between the two last-mentioned pronouncements (made with an interval of some fifty years) is, as you will note, the emphasis laid in the second upon the anticipatory search for disease causes, and the provision of living standards adequate for the maintenance of health. The first demands a catalogue of prohibitions; the second requires living standards based on personal and intimate services in the interests of the individual and the community alike. It is the province of social medicine, first, to find out what such living standards are—because, frankly, as yet we know them only in a fragmentary way—and, secondly, not only to apply them, but to make them the major aspect—the new approach as I called it formerly—to the whole problem of medical care.

For the main part of the population, the application of the principles established can be done in a practical way only by general medical practitioners, and preferably by the general medical practitioners of one's own choice in whom there is that confidence which, to so large an extent, is the basis of cooperation. The general medical practitioner is the vital executive unit in the programme of social medicine. Any unduly bureaucratic approach would be regarded as an intolerable intrusion into the privacy of the life of the individual, and would defeat the whole purpose of the present proposals.

It will, however, be immediately apparent that the general medical practitioner is not capable at present of providing a service such as that indicated, nor is unorganized competitive medical practice on the fee-for-each-service basis a suitable method of determining the remuneration of the medical men engaged in the task. How can anyone, for example, assess the value (in a competitive system) of steps taken for the promotion of well-being and the maintenance of health? How can a basis for payment for such services be set? The greater the time at present that any medical man devotes to them, the less his income is likely to be. Moreover, the whole popular view of medical care is that it begins—and, indeed, is required—only when sickness begins. Deliberately protective measures, as such, are considered the province of the State rather than that of the individual doctor or patient. How, on this side, can the value of the health records and examinations made by government agencies be maintained unless they are available, and continue to be the basis of the medical supervision of the health of the individual concerned?

Continuity of service by the practitioner of one's own choice is universally recognized as the ideal, and if that is to be the ideal, is it not necessary that we should seriously consider how such a service should be provided to every individual member of the community? It is my view that the general medical practitioner must combine the whole three objectives—the promotion of health, the prevention of disease and the treatment of sickness—and must be adequately paid for the work he does in respect of each of them; that he must have the advantage of specialist aid whenever it is necessary, whether it is a problem of diet or of drains; and that, since the whole course of medicine is more and more governed by the social considerations that affect health, not only must his training in social medicine be deliberate, but the social aspects of health and disease must be brought into the medical student's curriculum at every stage.

If this means some differences in the control of measures for the provision of health and medical care, and ultimately some alterations in the methods of payment for services rendered, we must, I think, as a profession, be prepared to find by what means these can be justly and indeed generously modified.

When, last year, the Medical and Hospitals Survey Subcommittee of the Commonwealth Parliamentary Joint Committee on Social Security commenced its investigation, it was first faced with the difficulty that there did not seem to exist anywhere any complete outline of the content of medical care. It arrived for working purposes at the following series of headings, recognizing as it set them down that the categories of need are always open to include any new aspect for which medical science indicates a potential solution. The list is set out under the six headings of "protective activities", "specialized activities for safeguarding maternity", "corrective activities", "adaptive activities", "economic accessory activities", and "educative activities", and, in full, it is as follows:

A. Protective activities, including—

- (a) The sanitation of environment, the health standards of housing, etc.
- (b) The care of the quality, quantity and balance of foods, including beverages and drugs, etc.
- (c) The specialized protection of certain age groups and states, e.g., mothers, infants and pre-school children, school children, young workers in industry, aged persons, etc.
- (d) Specialized measures against certain diseases, e.g., active immunization against diphtheria and whooping cough, routine X-ray examination of chests in some occupations and age groups, risks in respect of industrial diseases, prophylaxis of various kinds, etc.
- (e) Isolation or quarantine measures for infected persons, carriers and contacts.
- (f) The provision of recreation facilities and other deliberate provision for physical fitness and positive health.

B. Specialized activities for safeguarding maternity—

- (a) Training the mother in ante-natal and post-natal needs.
- (b) Infant feeding and infant welfare centres in conjunction with A. (c).
- (c) The care of parturient women in hospitals, and in their own homes.
- (d) District nursing in certain circumstances.
- (e) See E. (a), (c) and (d).

C. Corrective activities, including—

- (a) Hospitals for the treatment of infectious diseases.
- (b) Hospitals for general surgical and medical cases.
- (c) Hospitals for special remedial measures, e.g., fracture clinics, venereal disease clinics, tuberculosis clinics and sanatoria, orthopaedic hospitals, special senses clinics, cancer hospitals, etc.
- (d) Hospitals for chronic and convalescent cases.
- (e) Hospitals for mental sickness.
- (f) The provision of adequate nursing and ancillary personnel for the medical care of all sick persons.

D. Adaptive activities—sociological as well as medical—having as their objective the rehabilitation of persons recovered from immediate illness or the conservation of remaining physical or mental capacities in persons handicapped by permanent injuries—

- (a) Institutions for the blind, the deaf and dumb, or persons otherwise crippled.
- (b) Institutions for occupational therapy applied to the needs of epileptics, mental defectives, etc.

E. Economic accessory activities, including—

- (a) "Follow up" assistance for convalescents, or for recently confined mothers returning with infants to their homes.
- (b) Allowances to assist to maintain family or home security during the treatment of a breadwinner in hospital, e.g., for tuberculosis.
- (c) The provision of crèches and kindergarten facilities for the day care of the children of working mothers.
- (d) Actual domestic assistance during late pregnancy, childbirth, and for an adequate period thereafter.
- (e) Other allowances and pensions.

F. Educative activities—

- (a) Research.
- (b) Medical, nursing and ancillary training to prescribed standards.
- (c) Educational health propaganda.

(All three are shared with university bodies and other voluntary or quasi-governmental agencies.)

It will be seen from this programme that what has been commonly called the "public health aspect" actually is obvious in every section, and indeed almost completely fills each of them, except that under the heading "C. *Corrective activities*". All the protective activities, the specialized activities for safeguarding maternity, the adaptive activities—sociological as well as medical—the economic accessory activities and the educative activities, come within the scope of the programme that has finally been accepted as comprising the field of the governmental agencies.

It is almost invariably a matter of the greatest astonishment to the private practitioner to learn that, in respect of the corrective activities themselves, over 82% of all hospital beds in Australia are maintained by or aided from public funds, the remaining 17% being privately provided. (The exigencies of the war, particularly the difficulties of obtaining nursing and domestic help, are at the moment—and possibly permanently—still further reducing this percentage.)

The problem of social medicine, therefore, may, I think, be set out under three headings: (i) social medicine as a government responsibility, (ii) social medicine in the medical students' curriculum, and (iii) social medicine as an aspect of general practice.

Social Medicine as a Government Responsibility.

An increasing attempt has been made by governments of the present century to protect human life at all stages and in respect of particular hazards. You will recall from Shakespeare's "As You Like It" his often-quoted "seven ages of man":

... At first the infant,
Mewling and puking in the nurse's arms;
Then the whining schoolboy, with his satchel
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice,
In fair round belly with good capon lined,
With eyes severe, and beard of formal cut,
Full of wise saws and modern instances;
And so he plays his part. The sixth age shifts
Into the lean and slipshod pantaloon,
With spectacles on nose and pouch on side;
His youthful hose, well sav'd, a world too wide
For his shrunk shank; and his big manly voice,
Tuning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange eventful history,
Is second childishness and mere oblivion;
Sans teeth, sans eyes, sans taste, sans everything.

Government agencies for health have gone further, and have included two stages that are, so to say, with us but not of us—the ante-natal period with its particular emphasis upon ante-natal, maternal and infant welfare; and mental disorders at all ages, including as their requirements one-third of all hospital beds, and representing 3.4 certified persons in every thousand of the population. Moreover, whereas these activities are all qualitative, social medicine must direct its attention also to the quantitative aspect, for the first requirement of any nation is population. An ideal system would ultimately be futile in the face of a rapidly declining population.

In my "Blueprint for the Health of a Nation" (1944), I briefly set out the immediate causes of the decline which at present so seriously threatens our own survival, as follows:

The causes of the declining birthrate are complex indeed, including, as they do, economic, psychological

and physical aspects. The ultimate determinant (excluding actual infertility from pathological or deficiency factors) is the psychological attitude of the individual regarding the expediency of parenthood. The individual determination as to what is or is not expedient is governed by the psychical and environmental circumstances of the individual. Some of these may be subject to control, or, at any rate, to modification. A few commonplaces of everyday observation will, however, indicate the complexity of the factors involved.

Consider, for instance, what is contained in the intricate series of tendencies called "urbanization"—a process inimical to the birthrate and more pronounced in Australia (with the appalling total of 64.18% of its population in less than twenty cities and large towns) than in any other country in the world; the economic factors that postpone the average age of marriage among men and women both—an absolute element in diminishing the number of children per marriage; the increasing employment of women for wages in every industry except the most important of industries to the country—home-making; such very real handicaps to the family couple as housing difficulties, lack of domestic aids; taxation anomalies, etc. Pre-eminent on the psychological side are economic insecurity and lack of confidence in the future; the competitive influence of the social salesman who advocates socially impressive environmental standards—apartments, furnishings, cars, entertainments, clothing, etc.—as essential to social status; the excessive use of contraceptives and the deliberate abortions that are the inevitable concomitant of this competition (abortions reach an estimated minimum of 26,000 in Australia and a probable figure of 45,000 annually); and, over all, the *disillusionment* that goes with *frustration and non-fulfilment*. Some experimental evidence and considerable clinical observation suggest an increasing infertility among young people, manifested in men by the presence of immotile or otherwise aberrant spermatozoa or actual aspermia, and in women by failure of conception, unstable implantation of the ovum, and habitual miscarriage, due, it would appear, to faulty nutrition and hormonal imbalance.

The great majority of these causes of quantitative decline are beyond the scope of medical practice except in so far as they enter the field of social medicine.

There are, however, certain aspects which should normally form part of a programme of protective medicine, and justifiably be included under the heading "etiology", as the term is used by Sir James Halliday, or "epidemiology" in the sense in which the word is employed by writers in the United States of America. For example, *economic insecurity, poverty, malnutrition or faulty food balance, housing, states of borderline psychology, and other medical and surgical conditions directly influencing fertility*, all have practical medical angles, and in so far also as they are susceptible of definition and elucidation, come within the purview of permissible research.

Our inverted population ratio has also established as an immediate consequence certain new problems. One of these is gerontology or geriatrics—the hygiene or medical care of the elderly—until recently an almost unexplored field, but now of considerable significance. Dr. Michael Davis, in his book "America Organises Medicine" (1941), comments in the following terms on the extraordinary change in the demographic picture that the change in the age constitution of the population may effect:

The actual amount of physician's services . . . increases with age. Among persons 65 years and over an average of 5.0 physicians' calls per year were reported as compared with 2.7 calls *per capita* per year in the population as a whole and 2.8 calls among adults aged 45 to 64. Hospitalisation also increases with age except that the highest rates among women are during the child-bearing period. . . . The costs of care among elderly people are proportionately even higher. The types of disease from which middle-aged and old persons especially suffer are generally more costly to diagnose and to treat than the acute diseases which are relatively more prevalent among young persons. Among persons of 65 years and over the average annual expenditure for medical care . . . was nearly double the average cost among the population as a whole, and much more than double the average cost among children and young persons. Part of the increase is due to the larger utilisation of hospitals and other institutions by older

people. Part is due to the type and duration of the care required for the characteristic diseases of middle and old age. The relative increase of the older age groups will continue. On the assumption that the age specific mortality rates of 1935 would undergo no further decline, Perrott and Holland estimated that by 1980 there would be an increase of 92% in deaths from diseases of the heart, 80% in cancer deaths, and 87% in deaths from diabetes. Of this increase, 12% would be due to the population increase between these years and the remainder the direct result of aging of the population. Other factors, of course, including new powers of control in certain diseases, may enter to change the picture.

Other aspects, such as the necessity for fertility clinics, the complex problem of malnutrition and faulty food balance and its relation to income and the selection of food, the question of rehabilitation—not only of those who have suffered disability in the fighting services, but also of those who fall in the ordinary struggle for existence during peace time—the deliberate provision of parks, playgrounds, and other facilities to assist the promotion of "positive health"—all must be increasingly features of the government programme, and all tend towards specialization in the public health and social fields. Apart from these there is the increasing importance of industrial hygiene and sickness certification—now a matter of considerable moment, but one in which certificates produced in numbers to my department indicate a grave ignorance of industrial hazards and the significance of related signs and symptoms. There is also the question of the actual obligation of the individual medical practitioner to the State, which may be included under the heading of forensic medicine, and to which reference is again made below.

Into every routine aspect of these fields the general medical practitioner must enter as the partner of the State, if medicine is to be a service for health and not a service for disease. At present, to a large extent, he is conspicuously absent from them, though undoubtedly he gives much earnest and unpaid service to the promotion of health in individual cases.

There is, moreover, the necessity for a considerable development in deliberate research by the State itself with the assistance of universities, hospitals and the medical practitioner, public or private. Social medicine demands that every factor affecting the welfare of the individual must be studied and clarified, and in special places that objective means specialized fields of environmental study. (Australia, for instance, is a tropical and semi-tropical country, upon which we are seeking to graft a civilization developed over many centuries in and for the cold north-west of Europe. To a large extent, the physiological connotations of this very marked change are ignored, though circumstances are gradually modifying both custom and convention.) There are, finally, the social relationships of Australia with other nations, particularly with those in the immediate north—that is to say, the teeming nations of southern and eastern Asia and the Indonesian archipelago; the immense increase in speed of transport as aviation comes into its own; the new importance of New Guinea, the British Solomon Islands and the New Hebrides as the defence frontier of our nation; the vexed question of the introduction of immigrant labour of different living standards and possibly of widely differing race and colour; and other factors of the immediate future—all demanding a closer study of these matters with their related disorders, diseases and risks, from the point of view of applied physiology, parasitology and industrial hygiene.

This formidable list makes up the broad field of governmental responsibility. It requires the cooperation of the medical practitioners of the present, and of those in training.

Social Medicine in the Medical Students' Curriculum.

The medical students of the present and the future must be taught (1) that their community responsibilities are not only not less than their individual responsibilities, but that both are growing rapidly towards an equilibrium.

and (ii) that in speaking of clinical medicine, teachers and lecturers now mean the clinical practice of protective medicine and the safeguarding of "positive health", as well as the clinical practice of corrective medicine, and that a large proportion of the last-named results from the neglect of the other two.

The responsibilities both of the medical student and of the medical graduate in relation to the community—as personified by the State—require continued expression in lectures and practical demonstrations. Though the requirements for such a course have been indicated above, they may be set out again as including the following factors:

1. Positive health—that is, the deliberate promotion of the best physical and mental results of which the individual is capable. This is applied physiology.

2. Protective medicine—that is to say, (a) positive protection (the maintenance of health at all ages) and (b) sanitation of environment by obligatory legal measures and by education. This obviously means the establishing of a healthy man in healthy surroundings, and depends upon the application of the principles determined by previous studies, including bacteriology and parasitology. (Parasitology in these latitudes is, to all intents and purposes, tropical medicine. Its immense importance has been emphatically demonstrated by the military campaigns in New Guinea, in the Malay States and in the Dutch East Indies. See also for a recent recognition of this fact by the authorities in the United States, *The Journal of the American Medical Association*, Volume CXXV, Number 16, August 19, 1944, at page 1103.

3. Economic and industrial measures for the control and correction of industrial hazards and diseases, including a study of the principles of workmen's compensation, sickness certification, insurance against illness and accident, and the assessment of disability.

4. Measures for the prevention, and where possible, the best treatment of the obviously "social" diseases when established—for example, tuberculosis, venereal diseases, mental diseases and disorders, crippling, cancer, and also delinquency (in association with the department of psychiatry).

5. Rehabilitation of convalescents, in association with the departments of surgery and of physiotherapy, and the palliation of chronic disabilities.

6. Vital statistics in a practical sense, and by means of the figures, the demonstration of the special problems of local significance whether climatic (environmental) or economic.

7. Administrative or managerial medicine, in respect of institutions whether devoted to preventive or to curative medicine.

8. Forensic medicine or medical jurisprudence, including again, from this aspect, all forms of certification and the legal obligations of medical practitioners.

For experience in the practical aspects of these subjects, almost the only facilities now available are provided in institutions under the control of the State, State-subsidized, or open to State inspection. The aim should be to bring directly together industry and qualified medical practitioners interested in industrial hygiene. At the risk of repetition, I would emphasize again the significance at the present day of two problems of the greatest importance to all practising medical men—(a) those related to insurance practice and (b) those related to the assessment of disability and to certification. It is not sufficient to say that the latter are intimately related to and, indeed, part of the study of surgery and physical therapy, or that students are unprepared for them until the sixth year of the course, unless, indeed, the course is seriously intended to provide adequate study of them. While both grounds are correct in theory, neither operates in practice, and at present medical students complete their medical course and are registered as medical practitioners with no adequate training in these increasingly important aspects of their work. It is hardly to be wondered at, therefore, that medical certification for all purposes, as it comes to the notice of the department which I have the honour to control, is

practised in a way that is a reproach to the profession. Only coordinative group demonstrations in the sixth year of the course can cover adequately these aspects of social medicine.

The answer to the question as to how these items should be spread throughout the course depends upon the circumstances and the locality, but in my opinion, the programme should be somewhat as follows: In the first year, in conjunction with the department of biology, systematic parasitology illustrated in every aspect (as it can be) by organisms of medical importance in the Austral-Pacific biogeographical zone; in the second and third years, in conjunction with the departments of physiology and physics, personal hygiene (in respect of, say, air and ventilation); radiant energy (including the use of heat and cold in disinfection, refrigeration *et cetera*); moisture and humidity (including the sanitation of water supplies, swimming pools *et cetera*), and clothing and housing; in the fourth year, the promotion of "positive health" (fatigue, rest and exercise, recreation and training, acclimatization); preventive medicine and public health (including the special applications of applied bacteriology); industrial hygiene with visits to factories and workshops, institutional visits and demonstrations; in the fifth year applied parasitology (that is, tropical medicine, as far as possible correlated with ward work); combined institutional visits in respect of specialist subjects open to observation and in State institutions, at various ages and stages; forensic medicine with post-mortem clerkship (each student for two weeks for police cases); and the history of medical sociology; in the sixth year (by joint demonstration) insurance practice, assessment of disability, rehabilitation, occupational therapy, and all forms of certification, with lectures on the legal and ethical obligations of the medical practitioner.

Social Medicine as an Aspect of General Practice.

I have urged above and I have for some years consistently advocated the correlation of protective and corrective measures for health. Social medicine not only provides in its research aspects the basis upon which health may be protected, and, indeed, disease attacked, but acts as the link between "government medicine", university medical training and general practice. I believe that it is best located for actual practice in consultative health clinics in the cities and large towns, and that through cooperative effort and on a somewhat smaller scale, it is best established in association with the hospitals and the public health offices (including baby clinics, school health services *et cetera*) in small towns.

I have set this matter out fully in my recent publication "Blueprint for the Health of a Nation", Chapter IV; but I should like particularly to emphasize that the essential basis of the cooperation proposed is group practice within a loosely linked governmental organization, with the greatest possible degree of decentralization of control and the greatest possible autonomy within the practising medical group.

The establishment of a complete consultative health centre, as I see it, is an attempt to fulfil the following functions: (a) to correct the undue increase at large general hospitals, of out-patient work of a kind that is essentially general practice work, and to return it to the general practitioners who are established near these patients' homes; (b) to keep the local general practitioner in touch with his patient, even when the patient requires specialist care, and to provide him readily with that care; (c) to aid diagnosis without cost to the patient; (d) to minimize the overlapping and the overhead costs of professional competition, and to pool professional knowledge in the interests of the patient; (e) to safeguard the "doctor-patient relationship" so rapidly disappearing, and to preserve and extend what free choice of doctor there is; (f) to provide better and more complete records of disease incidence and aetiology and thus better facilities for productive research into common diseases; (g) to coordinate the personal aspects of protective and corrective medical care; and finally (h) to ensure to the medical practitioner himself (i) adequate remuneration for his services,

including sources from which at present he gets nothing; (ii) reasonable opportunities for the maintenance and improvement of his knowledge, his skill and his desire for ultimate specialization; (iii) relief from the present handicap of his "24-hours-a-day accessibility".

In return, the whole of the medical men in a district (with any additions necessary if they are short-handed) are asked to charge themselves with the complete care of the health of their district—the promotion of its health positively, the prevention of disease, and the correction of established illness.

The ideal of medical practice is that each patient should go for advice and treatment to the individual practitioner of his choice in the privacy of his consulting room. He should go to him for the promotion and maintenance of his health and the health of his family no less than for the correction of established disorders or ills. The medical practitioner should advise and treat his patients within the range of his competence, should obtain any necessary diagnostic or confirmatory aid or call in (from the clinic personnel) colleagues who can assist, or should refer the patient to the specialist he selects from the panel available when it is shown to him. So much of all this series of activities as is a single transaction in health should be regarded as such. It is best carried out at a single place, and, as nearly as possible, on a single occasion. I am aware that there are opposing views on this matter, but I cannot see how the ideals of social medicine can be attained as readily by any other means.

If the consultative health centre is conceded, where should it be established? What is the most convenient place? What has been the traditional trend? I have attempted to give my personal view in the following way. In any large city, there is a "Harley Street" of established medical associations—such, for example, as Macquarie Street in Sydney, Collins Street in Melbourne, Wickham Terrace in Brisbane, North Terrace in Adelaide, and so on. In these streets many buildings are entirely devoted to housing medical men's offices and consulting rooms, their private waiting rooms and their nurses and book-keepers. They may include various established specialists, specialists-in-the-making, general practitioners, and even private masseuses, laboratory workers, and other ancillary personnel attracted there by the ease of collaboration and the increased opportunities for exercising their special skill. Along "arterial" tram and omnibus routes, at road junctions in suburbs or adjacent to shopping areas, one sees the same thing to a limited extent—the consulting rooms of doctors, strategically set to assist and to invite the sick seeking attention. Clinics for preventive medicine, maternal and child welfare centres and other departmental aid stations are built in similar locations.

Consultative health centres of full status (that is, including all personal protective and corrective care short of specialization) require for their justification a minimal population of 15,000, and become unwieldy if they attempt to serve more than 50,000; the ideal provision is for 30,000 people. What a saving of overhead costs to the doctors and of discomfort and inconvenience to the patient would result if a joint consultative health centre for protective and corrective care, or even a polyclinic for corrective care alone, was set up in every town of 15,000 or more people, and in every suburb of from 15,000 to 50,000, at appropriate spots where population-density was greatest, where transport and traffic routes converged conveniently, and where there would be easy access, if necessary, to a subsidiary or base hospital!

In an area of optimal size (that is, 30,000 people), in my opinion there should be from fifteen to twenty general medical practitioners at the consultative health centre, with one at least performing full-time health duty, and acting also, it is suggested, as liaison officer for the government. The group should appoint its own superintendent, directly responsible to the government or controlling body, and in suitable cases, this officer might be one who had had at least ten years' experience as a general medical practitioner. The group should work on an equitable roster of set hours and fixed days, arrived at among the members by mutual consent in terms of the local necessities, but

ensuring that the centre was adequately staffed constantly, for day and night services.

Each doctor would see his patients as he would in private practice, from his own waiting room, in his own consulting room, and with the assistance of nursing and clerical staff supplied by the centre. The telephone switchboard operators would receive all calls; they would be allocated by the matron-in-charge to the medical practitioner asked for, and a time would be appointed. Emergency calls would have preference, and if the doctor asked for happened to be off duty or out on domiciliary visiting or otherwise urgently engaged, an immediate deputy would be provided. If the situation seemed to require an urgent visit at the home, or probably admission to hospital, the ambulance unit attached to the centre, with doctor and nurse, would visit the patient and decide the course of action on the spot. In any case, the patient would as soon as possible reach or revert to the doctor of his or her own choice. When the demand made on a particular doctor exceeded his capacity, he would, as in other organizations (or as in private practice), obtain an assistant junior, with consequent improvement in his own status among his medical brethren. Records of all cases would be kept on the lines now adopted by all first-class practitioners for private work.

There should be a monthly staff conference, with obligatory attendance of all members, for the purpose of a "medical audit" of cases, treatment and results, laboratory indications, special investigations, complaints or difficulties. Such obligatory staff meetings would be, at one and the same time, a check as to routine and special efficiency, an aid to improvement of techniques, a basis for healthy competition and cooperation, and a safety-valve to permit the neutralization of private grievances while still in their earliest stages.

The links between the consultative health centre (poly-clinic) and the minor and major subsidiary hospitals and the central hospital for expert techniques should be (i) the general medical practitioners and (ii) the specialist consultative squad. In this organization the medical officer of health would be the specialist "social physician", with direct association with the clinical side from which he is now so stupidly divorced.

Conclusion.

I repeat that the general medical practitioner, from my point of view, is an indispensable unit in the practical application of the ideals of social medicine. Moreover, it is my opinion from considerable experience that to obtain the best results from individual areas, there should be the greatest permissible amount of local autonomy. The problems of a local unit vary from week to week, and differ also in many essentials even from those of neighbouring units. They cannot be controlled in any detailed sense from the central location, and I consider that only by the greatest measure of local self-sufficiency can adequate local flexibility be achieved in the interests of the population served.

This does not mean to say, however, that there should be no coordination in what will become a comprehensive medical service for the people provided through health centres. In this matter, one borders upon that aspect of the subject which it is fashionable to call the "socialization of medicine" in contradistinction to "individualized medicine", which may be called, with equal asperity, "medical isolationism". But there is some confusion on the matter, which may well be dispelled by a study of the remarks of the late Dr. G. C. Anderson, who last year, in his capacity as Secretary of the Parent Body of the British Medical Association, set it out as follows:

There is a word that is now being made use of in some quarters to inspire in the profession fear of any kind of reorganization. It is the word "control". Control does not mean, or should not mean, official control of clinical treatment. . . . But in any efficient service so complex as a comprehensive medical service, there must be "control" in the sense of "direction". In any properly coordinated comprehensive medical service the individual general practitioner will have numerous relationships. Not only will he see his patients at their homes or at

his surgery or health centre, but he will take part in public health work; he will be associated with a hospital, perhaps by treating his own general practitioner cases there, or by acting as a clinical assistant in a department; he will have better opportunities for consultation with consultants and specialists and will have readier access to auxiliary services; he will cooperate with industrial medical officers; and he will, it is hoped, attend post-graduate courses regularly.

Collectively, both centrally and locally, the profession must maintain close contact with many aspects of social life, such as industry, education, youth organizations, hospital administration, the auxiliary services and public administration. Continuous working cooperation on such a large scale can be maintained only if there is general direction and coordination of the various parts; and the individual practitioner, as an essential unit in the scheme, must accept this general direction. If we accept the idea of a comprehensive medical service we must accept a measure of coordinating direction by suitably constituted authorities.

The fact that public money will be required for the development of the health services is another reason why we must acquiesce in a certain amount of control in the sense of direction. Voluntary effort cannot do all that is required. The voluntary hospitals will not be able to maintain themselves after the war without financial assistance from the Government. Adequate specialist services cannot be made available for everyone without assistance from public funds. Payment of hospital medical staffs, which is now advocated on all sides, will make possible a more equal distribution of competent consultants and specialists throughout the country. An adequate and efficient service can be provided only by a well-directed scheme with enough funds to attract a sufficient number of specialists in all the different branches, and only with the assistance of public funds can such a service be assured. . . .

It seems to me useless to say that we want a better and more extended medical service and in the same breath to declare that we will have nothing whatever to do with public direction.

There is a need for determining how the community should be regionalized. That in itself is a matter of considerable importance. As Kershaw has stated:

The importance of the local community as a social organism must be borne in mind. The State depends for its well-being and for its smooth administration on the individual, and this is specially true of the health services. The individual, however, is primarily a citizen of his own town or village, which he understands, and not of the State, which is beyond his comprehension. . . . His community must, moreover, be a natural one and not an artificial one. . . . The main principle in the defining of the region would be the achievement of homogeneity.

No system, however, will in any circumstances last if there is an attempt to control officially the actual treatment of the patient, or to interpose any lay person between the patient and the medical practitioner of his or her choice.

I have attempted to indicate that social medicine, which is just being recognized as a new approach to the whole subject of the provision of medical care, is essentially directed to the promotion of "positive health". It demands that the State shall consistently maintain research work, testing every circumstance that may help or hinder health, and finding the money to provide every communal activity for the prevention of disease and the treatment of infections. From the point of view of the medical officer cooperating with the Government, there is first the question of providing a complete change in the curriculum and in the outlook towards which the medical student is directed; while, finally, there is the essential indication that the general practitioner himself, with whatever aids may be necessary and with the provision of whatever funds are needed to attain and maintain public health and his own economic security, must be the vital and practical unit at every point, preferably through a network of strategic centres within which all the aspects of the subject formerly regarded as "public" and "private" respectively, are coordinated through men skilled in both sides of the subject. This would represent, it is recognized, a change in medical outlook as great as the transition from the anti-

septic period of Lister to the aseptic period of today; but medical men, though necessarily conservative, have always shown themselves able, if a better direction can be shown them, to follow it, and indeed to improve upon it. I believe that social medicine is such a direction, and that the medical profession stands on the threshold of a new opportunity.

SOCIOLOGICAL MEDICINE: ITS MEANING AND SCOPE.¹

By E. P. DARR,

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It seems to me that sociological medicine is a subject that is concerned with every cause of disease and death in a community—an aspect of medicine that is not content with curing disease, but insists on searching out the prime causes and teaching the necessity for their removal. The doctor in such a service for the first time in our medical history will deserve his title, for he will become essentially a teacher of the people in all that concerns health.

Medicine has claimed for some time that prevention is its chief purpose; as students we have been taught to seek for causes and when possible to remove them; but our search has stopped too soon; we have too often been content to look on the tubercle bacillus as the cause of tuberculosis, whereas the real cause is to be found in living conditions that have lowered the resistance of the patient—malnutrition, overwork, overcrowding, anxiety, lack of sunlight, ignorance. So far our imaginations have been too much captured by the fascinating picture of microorganisms as the great enemies of health, and our ideas of prevention too much dominated by ingenious tests and the injection of vaccines and sera. All these are very necessary, but they are only the opening chapter in the long story of prevention; the remaining chapters will be under the heading "removal of the social causes of disease"—and to write these chapters quickly is the task of social medicine.

Let us begin by considering poverty; we all know that it is a cause of much disease and death, but do we realize how much? A few figures taken from official statistics will give us this information. The United States of America Children's Bureau examined infant mortality according to the father's yearly income; the rate for incomes of 1,850 dollars *per annum* and over was 38.3 per 1,000, and the rate for incomes below 450 dollars *per annum* was 164.8 per 1,000. We can say, then, that of every 1,000 children born about thirty will die before they are a year old, because, even given the best conditions, in the present state of medical knowledge those deaths are not preventable; but among the very poor another 130 odd will die—from poverty.

A similar analysis was made of the general death rate in an English borough. In families occupying four rooms or more the death rate was 6.4 per 1,000; in families living in one room it was 39; that is, in the present state of knowledge, about six persons per 1,000 inevitably die of malignant disease, tuberculosis, diabetes, syphilis, heart disease and all the other infectious and chronic diseases, and 33 per 1,000 die of poverty.

There are tables showing the progressive rise in death rate with the fall in income. The following figures are relevant:

For 75s. and over per week the rate was 11.32 per 1,000.
For 56s. to 65s. per week the rate was 15.13 per 1,000.
For 46s. to 55s. per week the rate was 19.23 per 1,000.
For 36s. to 45s. per week the rate was 19.34 per 1,000.
For 25s. to 35s. per week the rate was 25.96 per 1,000.

As poverty pays such terrible dividends in death, it must obviously be equally effective in causing disease. Even short of disease and death, its effects are disastrous to the well-being of a nation. The Anthropometric Committee of

¹ Read at a meeting of the New South Wales Branch of the British Medical Association on October 26, 1944.

the British Association divided the population into five classes according to income and found an average difference in height of three and a half inches and in weight of thirteen pounds between the first and the fifth classes, although at birth there was no measurable difference in height or weight.

Psychological investigation tells a similar story; up to two years of age no difference in average intelligence can be found between the children of the richest and the poorest classes, but there the poorest begin to lag in mental development. So we see that in loss of intelligence, in loss of physique, in an overwhelming increase of disease and death, the nation pays a high price for poverty, which clearly becomes a matter for medical investigation.

Poverty has certain obvious by-products—overcrowding, slums, ignorance, crime. We find that in extreme cases of overcrowding, as in the tenement district of Bombay, the infant mortality is 524 per 1,000; even in our own cities it is twice as high, and juvenile delinquency is five times as high in the inner suburbs as in the outer.

But in rehousing slum families we must be careful not to injure rather than help. Two things especially must be considered. The first is that groups of people who have lived together in the same neighbourhood will be happier if they continue together. Rehousing should therefore be done in groups, in order that individuals may not feel so forlorn as they would if they not only changed their neighbourhood, but lost their human companionships as well—for human beings, especially the poor, who are forced together for self-protection against a hostile environment, still have a strong tribal feeling. If the poor have to pay more rent for better housing, they will have less for food. This is illustrated by what happened at Stockton-on-Tees. In 1927 the council moved 152 families of unemployed from a slum area into good new houses in a healthy neighbourhood; the rents averaged 4s. 4d. a week higher, which meant that each individual had 10d. a week less to spend on necessities. From 1923 to 1927 the death rate had been 22.91 per 1,000; from 1928 to 1932 it was 33.55. No explanation for this rise of about 50% could be found except that loss of 10d. a week.

Let us turn from the disastrous consequences of poverty to the prospects of abounding health opened to us by our leading experts on nutrition. Sir Robert McCarrison found that laboratory animals remained free from disease when kept in a good environment and fed on an optimum diet. Sir A. Howard, as a result of research in agriculture, was able to grow foodstuffs that gave cattle a natural immunity against septicaemia, rinderpest and foot and mouth disease.

Sir Edward Mellanby makes the following statement:

In the field of nutrition . . . every expert knows that the consumption of proper food from birth would revolutionise the standards of health and physique, but if the past is any criterion the adoption of the teachings of medical science will greatly lag behind the new discoveries. The extent of this lag will depend upon medical leadership, on doctors themselves, on public health authorities and on general intelligence.

Since ignorance is both a direct and an indirect cause of disease, we should study our educational system to find out why so many can be made the dupes of worthless advertised "cures" for rheumatism, tuberculosis and cancer; why so many irrationally oppose preventive inoculation; why astrology and kindred superstitions still flourish; in fact why our citizens still fall so far short of Plato's standard, when he remarked: "If by a good education the citizens be made reasonable men they will readily see through all those questions that are fundamental to the stability of the State." Professor Ashby tells us that our pre-school education is excellent in quantity, and keeps the interest of the children, because it is related to their living.

The job is to arouse the child's interest in everything, music, beetles, pennies, jumping; the chief quality of the kindergarten child is his interest in living . . . he builds every sensation into his experience. His attitude to life is just the attitude of the rare, alert man—the scientist or the poet.

Why does this alert intelligence degenerate in all too many cases into what Wells calls "the slouching mental

futility of the ordinary youth in his later teens"? Surely it is because teaching is no longer related to living, but tries to cram the memory with masses of unrelated facts to suit a rigid curriculum aimed at examination results. Until our schools turn out young men and women who appreciate physical perfection, who have mental balance, a sense of values, alert, inquisitive, creative minds that can examine any idea without bias, the coming generation will not be so healthy in mind and body as it should. And the teaching that we must give on health cannot be fully effective until we have a properly educated and intelligent audience. So an inquiry into education becomes a concern of medicine. We should strive that our education may become such that our youth, as well as gaining knowledge, always have before them a few incontrovertible social doctrines: that all men need security, peace and culture; that all should be free from unemployment, disease, crime and greed; "that the poorest he in England hath a life to live as well as the richest he"; that whatever interest, power or privilege hinders the attainment of these ends is evil; that facts should be followed relentlessly to their ultimate causes; that the greatest force in the universe is truth. If these fundamental principles were constantly before their eyes, our youth would soon reach Plato's standard of "reasonable men". But we will not reach this standard until our education has finally freed itself from the grudging fear with which an unwilling privileged class began to teach its illiterate workers. It is worth listening to Mr. Giddy, President of the Royal Society, and member of parliament, as he discusses elementary education for working-class children in 1807:

It would be found to be prejudicial to their morals and happiness; it would teach them to despise their lot . . . render them factious and refractory . . . it would enable them to read seditious pamphlets, vicious books and publications against Christianity; it would render them insolent to their superiors.

We still hear from our Mr. and Mrs. Giddy when it is proposed to advance education a little beyond the aim of producing hosts of labourers, machine-minders, clerks and shop girls.

Crime also should be regarded as largely a medical problem; it is certainly one of the major illnesses from which society suffers, and we should investigate its causes and its treatment. As a working hypothesis I would suggest that crime is largely a by-product of poverty and ignorance, and that our present treatment of it is in itself the cause of further crime. The articles and letters that appeared in *The Sydney Morning Herald* last February could leave no doubt but that our reformatories for child delinquents are in reality incubators for mature criminals; this view is confirmed by a statement (in *The Sydney Morning Herald*, February 23, 1944) that nearly half the prisoners then in Goulburn gaol had passed through the Gosford Boys' Home.

As the theory that there is a type born to crime has been discarded for the view that most criminals are made by their environment, it is at least reasonable to suppose that correct treatment in the right environment could undo a great deal of the moral, mental and physical harm that society has inflicted on them.

Too much of our thinking about the poor and the criminal is still tainted by the early nineteenth century attitude, when that great liberal, Bentham, could suggest as a cure for crime that the whole labouring class should be put into industrial houses "where work, education, recreation and marriage should be exactly regulated". Criminals were to be "ground" into industrious and respectable habits by working at hard, dull and useless tasks, being fed with a minimum of the most repulsive foods, and keeping perpetual silence. We think we have travelled a long way since then; but have we? We still use solitude, silence, starvation, darkness, and flogging in our penal system—and expect it to "reform" our criminals. Certainly in New South Wales there has been no flogging for many years, but its use seems to be on the increase in other States, where it is especially favoured for sexual crimes. One is entitled to be horrified at the medieval mind of a judge who thinks he is reforming the criminal and

protecting society (surely the only valid reasons for punishment) by ordering a flogging and a year or two in gaol, with no scientific inquiry as to why the man became a sexual criminal, and whether the punishment is likely to cure his perversion and protect society from his menace when he is released. That is enough evidence to suggest that it is time for medicine to investigate the causes and treatment of crime.

If the chief objects of a medicine with a social conscience are to lead in the fight against poverty, slums, crime and ignorance; to carry on constant research into the industrial and social causes of disease; to make as effective as possible all our ameliorative social services; to develop in medical students this new mental attitude, we must decide what form of medical practice will best enable us to fulfil those duties. For myself I think that it would be a salaried service; but it is vitally important that only the best conditions should be accepted. Absolute essentials are a reasonable salary and reasonable working arrangements, for no group of men and women is likely to give good work if they have a justifiable grudge; there must be opportunities for post-graduate courses at hospitals equipped for the purpose (I suggest as a minimum that all doctors should have at least three months every five years); in other words, 5% of the medical profession would always be revising their old knowledge and acquiring new. Ample opportunities should be provided for research and specialization wherever inclination and aptitude were apparent. The very heart of the new medicine would be research into the social causes of disease, and into ways of prevention of disease; curative medicine would become more and more a confession of failure to prevent, as surgery is now a confession of failure to cure without mutilation. There would have to be absolute freedom to publish any scientific article, and to criticize any aspect of the service. Management and discipline should be vested in a board, the majority of whose members would be doctors elected by doctors, answerable directly to the minister for health.

Wherever possible practice should be carried on from a health centre in a group, and it would be quite simple to arrange that the choice of doctor should be at least as free as it is now. I think that those are the minimum general conditions for a successful salaried service, and given those conditions, Australian doctors could make it the best medical service we have yet seen.

To anticipate the cry of "government stroke", I shall tell what I know of our forestry service. It is, of course, based on a salary which is rather poor, and the conditions as to holidays and promotion are not very good; but its members become filled with a profound devotion to their work—they seem to eat, sleep and breathe forests, and in times of bush fires will work twenty-four hours at a stretch, because it is interesting work, and because it is creative work, which they feel is of vital importance to their country's welfare. Medicine has exactly those qualities in an even higher degree, and I see no reason why doctors should be of poorer moral quality than foresters—unless they have been so corrupted by commercial practices that they cannot work without their pay "on the nail" for every medical service that they wrap up in a prescription and hand over their desk counter to their customers. One of our stock phrases is "the dignity of the profession"; but I cannot feel that it is dignified to insist on selling health retail in packets priced from 10s. 6d. to £3 3s. according to the eminence of the retailer; that is why I am in favour of a salaried service to destroy the humiliating cash nexus between patient and doctor, and to destroy all our vested interest in disease and give us instead a vested interest in health.

But what the form of medical service is to be should be determined by the answer to one question: what medical organization will best make easily available to every member of the community the whole resources of preventive and curative medicine? All doctors who have any appreciation of the essential rightness of just human relationships will know that such a system must be in their own best interests.

To sum up the duties of sociological medicine, I shall quote from Stanley Boyd's recently published book, "Doctor's Conscience":

We doctors must be engaged by the nation to educate and direct the national life of health. It must be made impossible for one of our leading doctors to be able to repeat his public statement that "Ignorance, malnutrition and economic insecurity are main causes of disease and are quite outside the scope of the profession". No factor of the national health must be left outside the scope of the trained servants of that health.

These ideas should not seem revolutionary; for years past leaders of our profession have been teaching them—René Sand, Alexis Carrel, H. E. Sigerist, Professor Ryle. To quote from the first and the last of these:

By building a shelter, making clothes, lighting a fire . . . primitive man claimed to be the master of his destiny. It behoves his descendants now to banish disease, poverty, ignorance and neglect. Sociological medicine is one of the instruments which will bring us nearer to this goal.

And Professor Ryle:

Good food and habits of feeding, good houses, better facilities for open-air activities and cleanliness, better education and cultural opportunity, holidays and social security . . . could bring benefit both human and economic to the individual and to the State, beside which those accruing from all our remarkable advances in remedial medicine and surgery of the last century . . . would make but a poor showing.

Medicine will not be able to fulfil its social duties unless it changes its traditional outlook; but can any body of citizens expect to remain static in a revolutionary world? And even *The Times*, *The Sydney Morning Herald* and the late Mr. Wendell Wilkie have admitted that we are living in a social revolution—probably the greatest of all revolutions. As a rough generalization we may say that the religious revolution following the Renaissance gave us spiritual freedom and religious democracy; the political revolutions of the seventeenth and eighteenth centuries gave us political freedom and capitalist democracy; the revolution that is going on now will give us economic freedom and economic democracy; and we have the privilege of playing a great part in helping man to throw off the last of his fetters, which bind him to an outmoded economic structure.

How are we to set about fulfilling these new obligations? First of all we must accept the belief that it is our paramount duty, as individual doctors and as a corporate body, to search out and make public every social cause of disease—malnutrition, bad housing, unhealthy working conditions, failures in our education—and to show to the community the consequences in disease and crime and death. In other words, not only must we set out to be curers of disease, but we must become the teachers of the people of all that is needed for perfect health.

To do this effectively we must first see that our medical education turns out the new generations of doctors with the new outlook. In England Dr. Ryle, as professor of sociological medicine, and Dr. John Pemberton, of Sheffield, are teaching along these lines. Pemberton recently pointed out that the mortality rates of diseases of the respiratory system, of ear and mastoid disease, of valvular heart disease and of gastric and duodenal ulcer, increase steadily as the social scale is descended, and that there is a relation between social grade and cancer of the "exposed" sites, death rates from this cause being twice as high in the lowest class as in the highest; he has also shown that steel workers have a high incidence of pneumonia, and that cancer of the lung is more common in foundry and metal workers than in the general population. These facts have all been established, but the reasons still await research. Pemberton makes the following suggestion:

One of the first questions a medical student should be trained to ask himself when confronted with a sick person is "to what extent has this patient's environment contributed to the aetiology of his disease?" and when the diagnosis has been made "to what extent will the treatment and prognosis in this case be influenced by environmental conditions when he leaves the hospital?"

To fulfil our social duties we should need to establish some new machinery; but that would not be hard once we had acquired the new outlook. The main problem would be to reach the people effectively. To do this we should need access to the Press and to the wireless, which we already have to a slight degree, and we should need to publish our own health journal; the spirit behind it all would have to be an inflexible determination that the public should know the scientific truth about every aspect of their daily life that affected their health. This programme would undoubtedly have political effects; but these would come as the result of a public opinion educated in the meaning of health. The medical profession should never utter a word that could involve it in party politics; it should learn how not to make pronouncements about health from the Federal Council's recent unfortunate wording of their statement on the reduced butter ration, which led many people to believe that the council was more concerned to bring political damage to a labour administration than to make a scientific comment on a matter of nutrition. I can best illustrate the way it seems to me such pronouncements should be made by imagining that the Parent Association had had a social conscience in Britain in 1931; at that date there were over 2,000,000 registered unemployed there—probably between 5,000,000 and 6,000,000 people existing on the dole; at any rate Sir J. Boyd Orr, some time later when conditions had improved, found that 4,500,000 people in England had four shillings a week or less to spend on food. In these conditions the government introduced the means test and cut food relief by 10%. The medical profession had ample statistics to prove how much disease and death this would cause; if it had had a social conscience it would have seen that every intelligent person in Britain knew that the cost of these economies would be the loss of tens of thousands of lives every year; at the same time it would have made it clear that no opinion was offered as to whether these financial economies were inevitable.

Here, too, while almost every third worker was unemployed, and whilst the unemployed and their dependants were existing on a dole of 7s. a week, our profession passed by on the other side. But I do not believe that a similar crisis will find us again dumb, for now we do speak publicly on health, although only in the narrowest and most orthodox sense. We have a young Section of Sociological Medicine; our leaders have stated publicly that the foundation of health is nutrition, and I believe we are nearly ready to become a profession that will practise and teach preventive medicine in its widest sense, and that is sociological medicine.

If our profession as a whole acted resolutely and intelligently on all the implications of this subject, if it opposed inflexibly everything in society that damaged mental and physical health, and taught constantly the benefits that would come to the community from better nutrition, better housing, healthier working conditions and more intelligent education, then we should have a profound influence on the well-being of our nation.

THIAMIN FOR SCHOOL CHILDREN.

By STEPHEN MANGOLD.
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VITAMIN B₁, or thiamin was isolated and identified some years ago. The physiological role of thiamin is not yet clearly defined, but latest experiments suggest that thiamin in the form of its pyrophosphoric acid ester is connected with the carbohydrate metabolism.

The daily requirement for the upkeep of a normal level of thiamin has been determined by Cowgill as 330 international units or one milligramme, but latest experiments (Baker *et alii*) suggest some higher values, about two or three milligrammes. Thiamin is present in practically all available food. It is not destroyed by cooking except in

the presence of an alkali. But no sources of thiamin are known of such degree that one meal could provide the daily requirement. As our thiamin is obtained from foods containing variable amounts, and as any surplus is excreted and not stored, it is evident that a continuous supply has to be maintained. The highest amount of thiamin will be found in meat (pork), whole wheat bread, egg-yolk, beans, peanuts *et cetera*. At present most of these foodstuffs are "rationed" or not available at all, so that an inadequate intake of thiamin with our daily meals may be suspected.

That beriberi was a gross deficiency disease due to lack of thiamin was determined many years ago. This disease is prevalent in the rice-eating countries, where people used to eat polished rice. Many other neuritic complaints are suspected of originating in a thiamin deficiency—for example, alcoholic polyneuritis. Experiments and observations have revealed also many minor deficiency diseases. Price observed a slight increase in the growth of babies after they were fed with proportional quantities of thiamin; but she could find no significant rise in their weight. Joliffe has pointed out factors which increase the need of thiamin, which he has classified in three groups: (i) increase in total metabolism (delirium, manic-depressive psychosis, fever, hyperthyroidism, pregnancy, rapid growth); (ii) faulty assimilation as in diarrhoea, achlorhydria, carcinoma of the stomach; (iii) increased excretion (polyuria in diabetes and *diabetes insipidus*, lactation).

Based on the results of these authors and other similar observations are suggestions, especially from enterprising firms manufacturing "tonics" with smaller or larger contents of thiamin, that a daily dose of thiamin should be given indiscriminately to everyone. It was these facts that led me to investigate whether there was any need to supplement the normal diet of the children in my district with additional thiamin. Adelong and its surrounding district, with a population of about 2,000, is situated 900 feet above sea-level. The yearly average rainfall is 28 inches. The district has mostly grazing lands with many orchards and vegetable gardens. The average income is fair and the general health, in my opinion, is good. I approached the headmaster of the local school and asked him for his cooperation. This was granted most generously, and I had throughout the active help of the headmaster and the teachers of the school, for which I am very grateful. They have given me every help and have distributed the thiamin tablets to the children every day.

I selected boys and girls from the fourth, fifth and sixth classes, asked the parents for their permission, and chose the first two-thirds of the children answering "yes" for administration, the other one-third for control. In all 38 children in the age group nine to thirteen years participated, 23 being given thiamin, the remaining 15 being used as the control group. I gave them twice per day (morning and afternoon) one milligramme of thiamin. The experiment commenced on July 1, 1943, and was completed on November 30, 1943. Each child received during this time 306 milligrammes of thiamin. The following data were collected: weight and height, days missed from school through illness, general conduct and school results.

The average gain in height during five months was as follows: test group, 1.4 inches; control group, 1.3 inches. The average gain in weight during five months was as follows: test group, 3.7 pounds; control group, 3.4 pounds. Although a slightly increased average gain in weight and height can be seen from these figures, no spectacular individual gain was observed in the test group. Children in both groups showed an increase in height and weight corresponding closely to the average result. There was a general decrease in the number of days missed from school in both groups compared with the previous year, when a measles epidemic occurred in the same period. There was no pronounced difference in the number of absences between the two groups during the thiamin test period. The results of the school examinations revealed no difference at all between the two groups, and it was the opinion of the headmaster and teachers that no pronounced increase in alertness or good conduct was to be observed.

Conclusion.

From these observations, regardless of the comparatively small number of children used for the experiment, I had to come to the conclusion that, in areas where adequate food is given and normal care is taken by parents of their children, there is no need for the indiscriminate use of thiamin. As the result of my observations therefore I would suggest that the use of thiamin should be restricted to children suffering from definite deficiencies as indicated above. I would further suggest that similar investigations ought to be carried out in districts where no ample supply and no variety of food containing thiamin are available for the children throughout the year.

Acknowledgement.

I have to thank Messrs. Andrews Laboratories, Sydney, for generously supplying the thiamin tablets used throughout this experiment.

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Reports of Cases.

PULMONARY HEMOSIDEROSIS.¹

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Clinical Record.

THE patient, a girl, was first admitted to hospital on May 26, 1940, at the age of two years and nine months. She had previously contracted measles, and later pertussis, but she had made a complete recovery on each occasion. Apart from these illnesses she is said to have been in good health, until a time five weeks prior to her admission to hospital. At this time her medical attendant recorded her colour as good. During these five weeks she became languid and pale, complained of a sore throat, and had several attacks of vomiting.

Physical examination upon her admission to hospital revealed extreme pallor, despite which the lips were noticed to have a faintly cyanotic hue. The liver was palpable for a distance of one and a half inches below the costal margin. There was no palpable enlargement of the spleen or lymphoid tissues. Complete examination of all systems failed to detect any other abnormal signs. An examination of the blood upon the day of her admission to hospital disclosed a microcytic, hypochromic anaemia of marked degree (see Table I, record of blood examinations carried out during the course of the illness).

The condition at this stage, therefore, presented as a severe anaemia of apparently fairly rapid onset. Reference to the tabulated blood counts also shows a raised reticulocyte count. Further to this, a strongly positive Van den Bergh indirect reaction was obtained from the serum.

In view of these findings some form of hemolytic anaemia was quite naturally suggested. The family history was of no help in fixing this diagnosis more definitely, and at no period of the illness did examination of the patient's erythrocytes reveal any increased fragility to saline solutions. Repeated blood transfusions (see in table of blood counts) from donors of the same group were resorted to. This occasioned a slow but consistent increase in the erythrocyte

numbers and the hemoglobin value. There was no reaction to any of these transfusions and no evidence of excessive cell destruction following them—that is, no apparent incompatibility was induced, as might have been occasioned by the repeated transfusions. Apart from an occasional attack of coughing, sufficiently severe to warrant the exclusion of any detectable pulmonary lesion by clinical methods, the patient progressed slowly, and by July 29 she was considered sufficiently well to be discharged from hospital, but was required to report at regular intervals for continued observation.

Examinations of the blood (see tabulated list) performed during this period, while the patient was out of hospital, revealed minor fluctuations only in the number of circulating erythrocytes. It will be noticed, however, that the reticulocytes continued at a raised level, suggesting a persistence of that process which was causing red cell destruction. It would appear, however, that this process was not of sufficient intensity at this time to overcome the cells added by rapid marrow regeneration. During this phase of the illness the patient was readmitted to hospital for short periods on the following occasions.

The first readmission was on February 18, 1941. She had not been in her usual health for the previous six weeks, and had vomited blood once. Nothing further of interest was elicited on this occasion, and she was discharged from hospital on February 25.

The second readmission to hospital was on April 15, 1941. The patient gave a history of cough and grunting respirations of two weeks' duration. The presence of cyanosis was again observed, but percussion and auscultation of the thorax failed to reveal any abnormal physical signs. The liver margin at this time was recorded as two and a half inches below the costal margin, and the tip of the spleen was just palpable. The child was discharged from hospital on April 22. The attacks of coughing, which have already been noted, had become at this stage increasingly persistent. A radiograph of the chest was taken, which revealed consolidation of the right lung at the base, together with enlarged mediastinal lymph nodes.

The child was readmitted to hospital for the last time on July 9, 1941—that is, about three months after the penultimate admission. When examined she was semi-conscious and showed signs of severe respiratory embarrassment. Death occurred a few hours later.

The story of the illness in this case may be summarized thus: the total duration was fourteen months; the onset was rapid (but this point is not definite); the illness was a severe anaemia with evidence of progressive red cell destruction, which in the latter part was just compensated at a lower level by regeneration of red cells; the cause of death was respiratory embarrassment.

Post-Mortem Examination.

A complete autopsy was performed.

Examination of the brain and its meningeal coverings, except for general pallor, revealed no pathological lesions. The cervical lymph nodes were not enlarged. The thymus was pale and rather small, the weight being ten grammes. Upon examination of the lungs a most arresting and unexpected picture was disclosed. Apart from a thin, anterior fringe, of pale and crepitant lung tissue overlapping the anterior part of the mediastinum, all of the pulmonary tissue was involved in a similar pathological change. These organs were of a uniform, deep reddish-brown colour, non-crepitant, firm and rubbery in consistency, and extremely heavy. There were no fluid accumulations within the pleural sacs, nor was there any pleural thickening, and the parietal and visceral surfaces of these membranes were smooth and glistening. When the lungs were cut through, considerable resistance to the knife edge was experienced. Inspection of the cut surface revealed that the same uniform, deep reddish-brown colour pervaded all the pulmonary tissue and helped to confirm the impression already gained that it was almost entirely non-air-containing. This cut surface was dry, and was slightly gritty to the touch. The right lung weighed 350 grammes and the left lung 315 grammes; these weights are considerably above the normal average for a child of this age.

All of the cardiac chambers were slightly dilated, but more particularly the right ventricle, the wall of which was a little hypertrophied. The entire cardiac musculature was pale and flabby, and displayed a yellow mottling beneath the endocardium. The valves and vessels were not diseased. There were no developmental defects. The weight of the heart was 90 grammes.

¹ Submitted for publication, October 28, 1943.

TABLE I.
Results of Blood Counts Performed During the Illness.

Date.	Erythrocytes per Cubic Millimetre.	Hæmoglobin Value. (Grammes per Centum.)	Colour Index.	Reticulo-cytes per Centum.	Leuco-cytes per Cubic Millimetre.	Neutrophile Cells.	Lympho-cytes.	Mono-cytes.	Eosinophile Cells.	Immature Forms.	Thrombocytes per Cubic Millimetre.
26.5.40	1,550,000	3.0	0.56	12.0	11,300	5,424	4,520	904	339	113	560,000
26.5.40	Afternoon, 2,080,000	4.2	0.6	7.0	9,600	5,184	2,976	1,152	288	Nil.	Not counted.
28.5.40	Afternoon, 2,170,000	5.0	0.7	8.0	16,500	10,395	4,455	1,155	495	Nil.	Not counted.
31.5.40	Transfusion of four ounces of citrated blood.	8.3	0.8	13.0	5,700	4,161	1,083	342	Nil.	114	430,000
1.6.40	3,090,000	8.8	0.8	1.5	8,300	6,300	1,245	498	249	Nil.	330,000
4.6.40	3,310,000	7.4	0.8	5.0	8,300	5,976	1,460	415	249	Nil.	Not counted.
12.6.40	2,660,000	Transfusion of six ounces of citrated blood.	10.3	0.83	1.6	9,400	6,392	1,974	940	94	613,000
13.6.40	3,650,000	11.2	0.83	4.5	12,900	8,385	3,354	1,032	Nil.	129	624,000
19.6.40	3,950,000	9.2	0.85	7.0	6,700	4,690	1,608	335	67	Nil.	Not counted.
2.7.40	3,240,000	9.5	0.85	11.0	8,200	5,084	2,214	410	492	Nil.	340,000
11.7.40	3,220,000	10.4	1.1	2.5	8,900	5,874	2,759	178	89	Nil.	330,000
24.7.40	2,840,000	11.0	0.9	2.0	10,000	6,300	3,000	600	100	Nil.	456,000
29.7.40	3,730,000	9.4	0.77	7.0	9,700	5,626	2,813	776	388	97	Not counted.
13.8.40	3,500,000	11.3	0.85	—	3,800	1,900	1,596	190	114	Nil.	Not counted.
24.9.40	3,900,000	8.7	0.71	5.0	5,300	2,862	2,120	159	159	Nil.	Not counted.
29.10.40	3,500,000	10.0	1.0	3.0	6,900	4,485	2,139	138	138	Nil.	313,000
10.12.40	2,900,000	11.9	0.87	2.0	9,500	5,700	2,850	570	380	Nil.	Not counted.
7.1.40	3,900,000	10.0	0.9	4.7	10,000	7,900	1,700	300	100	Nil.	782,000
4.2.40	3,200,000	10.3	1.0	6.0	7,900	5,609	1,738	237	316	Nil.	Not counted.
18.2.40	3,070,000	11.0	0.83	6.4	18,600	11,160	6,696	558	186	Nil.	Not counted.
15.4.40	3,900,000	9.3	0.86	—	8,800	6,248	1,936	528	88	Nil.	Not counted.
10.6.40	3,300,000										

The inferior edge of the liver projected three inches beneath the costal margin. This downward projection was not occasioned by any increase in size of the organ, but was due to a ptosis brought about by the increase in weight of the thoracic organs. The surface was smooth, and the cut surface pale brown and homogeneous. The weight was 480 grammes. The gall-bladder was normal and the bile passages were free. There was no evidence of formation of pigment stones.

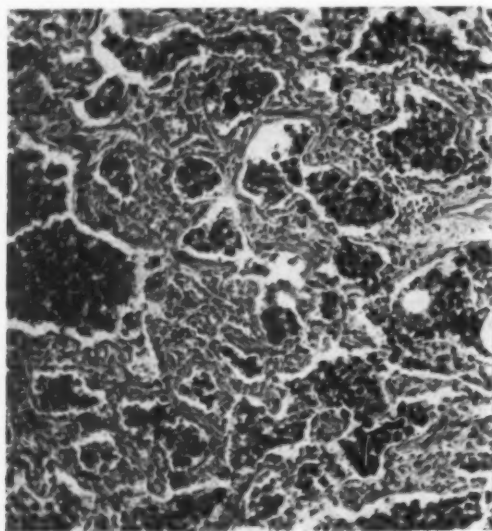


FIGURE I.

Lung ($\times 100$); masses of hemosiderin within the pulmonary alveoli; marked increase in fibrous and muscular tissues.

The spleen was only a little larger than normal, the weight being 70 grammes. The capsule was smooth and there were no adhesions. The pulp was firm and red. There was no evidence of fibrosis. The Malpighian bodies were well defined.

The lymph nodes of the thorax and abdomen were prominent, though not unduly large. The nodes surrounding the bronchi at the bifurcation of the trachea were of a brownish tint. Except for the general pallor, which was a feature of all the organs apart from the spleen and lungs, the kidneys, adrenals, pancreas and alimentary tract

appeared free of gross pathological change. The right femur contained red marrow throughout the entire length of the shaft—a normal appearance at this age.

Before a more detailed description of the histological study is given, some survey of the macroscopic findings may clarify the picture. In essentials, the gross pathology is limited to the extensive change in the pulmonary tissues. This lesion bears a distinct similarity to the condition found, usually

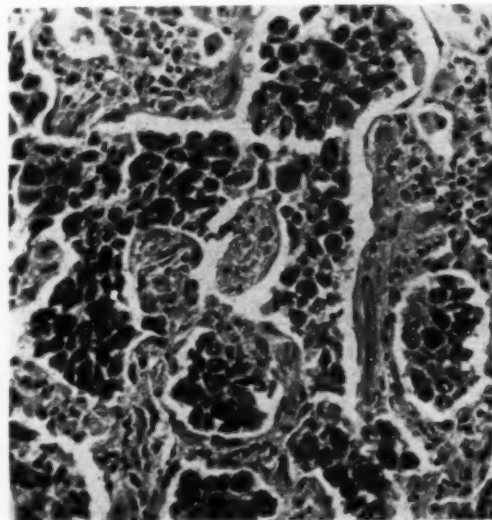


FIGURE II.

Lung ($\times 200$); hæmosiderin contained within macrophages; thickening of the alveolar walls apparent.

In the more dependent parts, in the lungs in cases of prolonged congestive cardiac failure, and generally known as brown induration of the lung. The findings in all the other organs and tissues, including the heart, are compatible with changes brought about by prolonged oxygen deficiency and decrease of circulating hæmoglobin.

A histopathological study supplies the additional facts.

Routine examination of portions of grey and white matter from the brain revealed no pathological changes of consequence. The adrenals, pancreas, pituitary and thyroid were histologically normal. Fatty droplets were present

within the epithelium of the renal convoluted tubules. Apart from this the kidney was not diseased.

It remains to deal in slightly greater detail with the findings in the lungs, lymph nodes, spleen, liver and bone marrow, recording negative as well as positive facts where these would seem relevant.

Sections from blocks of the lungs, taken from many areas in both the upper and lower lobes of both sides, show an identical picture. Almost all the alveoli are packed with foreign substances, sometimes to the point of distension and to the exclusion of air space. For the greater part these substances are composed of haemosiderin granules, large and small, mainly enclosed within large histiocytes, but also lying free in the air sacs. Together with this, there is unchanged haemoglobin, and in some air sacs—those in which haemosiderin is present in a lesser amount—there are collections of undestroyed erythrocytes. Hyperplasia of the alveolar lining cells has occurred in many parts, and in all areas the alveolar walls are much thickened and strengthened by hypertrophy of muscle and of elastic and fibrous tissues. This accounts for the increased resistance to the knife and for the firm and rubbery consistency. The bronchioles and bronchi contain products of red-cell disintegration similar to those found within the alveoli. The lung capillaries are dilated, except in areas pressed upon by densely filled alveoli, but in these channels and in the larger vessels no histological peculiarities are obvious.

Many of the lymphatic channels within the lung contain phagocytosed haemosiderin, and there is an increase of the lymphatic tissue around the intrapulmonary bronchi.

Examination of the peribronchial and peritracheal lymph nodes, particularly those at the hilar regions, reveals follicular hyperplasia and sinus catarrh. Considerable quantities of haemosiderin contained within phagocytes occupy the sinuses of these nodes.

In the spleen, the Malpighian bodies are large, pale and prominent. These appearances duplicate that of the follicular hyperplasia found in various lymph nodes examined. This is a common finding in the lymphoid tissues of infants and young children, and would seem to be of little significance. The splenic sinusoids are congested, and there is some hyperplasia of the cells of the pulp. Occasional small haemopoietic foci can be discerned. There is no accumulation of haemosiderin in this organ, either lying free or contained within cells or in the fibrous trabeculae.

There is a small degree of fatty change within the hepatic cells. The Kupffer cells are not prominent and contain no haemosiderin.

Apart from a proliferation of normoblasts, the marrow from the femur is normal.

Histological examination of the heart confirms the absence of any pathological lesion, apart from a moderate degree of fatty degeneration of the muscle fibres in the inner third of the wall.

Discussion.

The histological examination confirms the assumptions based on the macroscopic findings. It discloses within the lung parenchyma an abundant and extensive foreign deposit. This deposit has been occasioned by the disintegration within the air sacs of extravasated erythrocytes: all evidence tends to show that this deposit has taken a considerable time to accumulate, and that large amounts of blood have gone into its making, though the exact quantity cannot be assessed, since no certain knowledge exists of the proportion of the haemoglobin molecule which is converted into haemosiderin. There are features also which indicate that the lesion was progressive and active up to the time of death, and that about this time a rather more extensive extravasation than usual occurred. Apart from the accumulations of haemosiderin in the lymph nodes, draining the lungs, pallor and fatty degeneration are the only positive or significant changes in the other tissues.

Such an extensive pulmonary haemosiderosis must be a most unusual occurrence at this age period. The first explanation that comes to mind to account for such changes is that they are nothing more than an expression of cardiac weakness, brought about by continued anaemia, with consequent fatty degeneration of the heart, congestion of the pulmonary circuit and oozing from the congested vessels. Such an extensive pulmonary consolidation is found occasionally in adults suffering from long-continued congestive cardiac failure. This explanation may be the correct one in this case, but in many ways it is not satisfactory. The clinical features are almost entirely incompatible with such a pathological diagnosis. At no stage of the illness was there clear evidence of congestive cardiac failure. The veins were not found to be engorged, the heart was not

enlarged, and there was no oedema of the dependent parts nor any fluid accumulations in the serous sacs. The only sign pointing in any way to a general increase in venous pressure was the downward extension of the liver, and the post-mortem findings make it doubtful whether venous engorgement was the true explanation of this. In confirmation of this opinion, the heart was not noted to be enlarged in the radiograph of the chest made at a late stage of the illness. From the pathological point of view, it must be admitted that extreme cardiac failure does occur without leaving any traces detectable by histological methods, while in this instance slight dilatation was encountered, and some evidence of fatty degeneration. If cardiac failure is the true explanation, then it must be accepted that pronounced pulmonary congestion of long duration can occur without any clinical evidence of congestive failure, and when examination of the heart reveals no anatomical peculiarities. A further unsatisfactory feature is the original cause of the cardiac failure. The assumption that it could be occasioned by the anaemia is difficult to substantiate, for the degree of the haemoglobin deficiency was severe only at the onset, and from that time onwards, never fell below nine grammes per 100 cubic centimetres of blood. Thus it would be necessary to assume that the same factor which occasioned the anaemia, and continued active throughout the illness, was also a toxic agent for the cardiac musculature.

There is, however, an hypothesis which would fit the facts in this case. This would need to assume some weakness, inherited or acquired, of the capillary bed within the lungs—such a weakness as was not overwhelmed even by such diseases as measles or pertussis with their attendant thoracic stresses, though these diseases might be visualized as accentuating the defect. Slow oozing could then occur from the lung capillaries, the regional involvement being analogous to some of the other haemorrhagic diseases.

On such an hypothesis the case under discussion would become capable of explanation as an example of chronic prolonged haemorrhage occurring into the absorbent sponge-work of the lung. Such a haemorrhage must presumably have begun some time prior to the patient's admission to hospital. Certainly the blood counts are compatible with this assumption, particularly the low colour index, for most of the iron would not be free for further use as it can be in a haemolytic process. The persistently raised reticulocyte count would also be capable of explanation on this basis. As for the increase in the circulating bilirubin, as evidenced by the Van den Bergh reaction, it has been shown that dispersal of some of the haemosiderin had occurred from the lungs to the regional lymph nodes. It is no far cry from this to the conversion of these products of haemoglobin breakdown into bilirubin by the reticulo-endothelial system so approached. It would be interesting to know whether such a conversion could occur within the lungs without the need of transport beyond these organs. It would seem quite possible. A further point which tends to weaken the haemolytic background for this case, though it does not entirely exclude that possibility, is the complete absence of haemosiderin within the reticulo-endothelial cells of the spleen and liver. It is not contended that there is any proof for the hypothesis above stated. The best that can be said for it, is that it does account for the pathological changes found, and brings these into some form of alignment with the clinical picture, which the theory of primary cardiac failure fails to do.

Conclusion.

A case is described which in the clinical course resembled a chronic haemolytic anaemia of unknown aetiology. It is argued that, though a haemolytic basis cannot be disproved, it does not serve as an ample explanation for all the features. Repeated intrapulmonary haemorrhage is suggested as an alternative.

Addendum.

Since the above report was submitted for publication, Pilcher and Eitzen (*American Journal of Diseases of Children*, May, 1944) have reported a similar process occurring in a boy, aged six years. This condition also presented, in the first instance, as an anaemia with slight jaundice. Pilcher and Eitzen noted that one other case had been reported previously by Anspach in *The American Journal of Roentgenology* in 1939. This case was overlooked by the writer when a search of the literature was made. Anspach ascribed the findings in his case to a necrotizing arteritis; but in the case of Pilcher and Eitzen, in conformity with the case here reported, no such lesion was revealed and no cause for the condition was determined.

Reviews.

CHILD GUIDANCE.

"THE THEORY AND TECHNIQUE OF CHILD GUIDANCE", by P. H. Cook, M.A., Ph.D., is an introductory manual for students and workers in the field of mental hygiene as applied to children.¹ The writer has had the opportunity of studying child guidance methods abroad and has given a balanced survey of technique and procedures observed.

It is pointed out that the systematic treatment of children with personality and behaviour problems is something that has been developed during the last two or three decades, and that so far the development of this work in Australia has been almost negligible. This neglect is not only unfair to Australian children, but extremely serious for society as a whole. Not only does it mean a wastage of lives which could be socially useful, but it will also mean an increased burden on the community to maintain the antisocial and maladjusted individual needing institutional care.

The backwardness of this country in developing this form of community service is attributed to lack of public and professional concern with the problem, inadequate training facilities and openings for staffs, and the unwillingness of governments to give the necessary financial backing.

In the discussion on the qualifications and functions of the members of the clinic staff emphasis is laid on the necessity for the team to function as a cooperative unit, the fields of the psychiatrist, psychologist and social worker interacting with one another so that a composite picture of the individual may be gained, and an understanding of the dynamics of the case made possible. The various types of clinical service are listed and elaborated, and the many forms of diagnostic procedure are critically examined, and the discussion of the many types of therapy makes interesting reading.

This book gives an adequate survey of the field of child guidance, and with the aid of the many suggestions for further reading should be a satisfactory starting place for those who wish to become more fully acquainted with the scope of this very necessary, but so far neglected, social service.

A PROGRAMME FOR NATIONAL HEALTH.

FROM Queensland comes a book by Sir Raphael Cilento, Director-General of Health and Medical Services, entitled "Blueprint for the Health of a Nation".² The book represents the author's personal views on the measure of control that should be set up in regard to the protection of the health of the community and the promotion of its well-being. He suggests that the book may serve either as a working basis or at least as a basis for discussion.

Apart from the preface, the book is divided into seven chapters, and there are two appendices. The chapters are headed respectively: "Introductory and Historical", "The Problem of Medical Care Here", "Present Availability of Medical Services", "Group Practice in City, Country and Outpost", "Positive Health and Social Medicine", "Gross Machinery of Control", "Method of Payment of Doctors, and Concluding Comments". In the chapter on the problems of medical care the difficulties are described in respect of three widely differing types of area—the outback areas, the intermediate areas and the capital cities. In the following chapter the author, in discussing the availability of medical services, refers to these three types of area. He thinks that consultative health centres, investigational and diagnostic laboratories and public health annexes should supplement existing agencies. Where these advances in the public interest deleteriously affect the economic security of the private medical practitioner, adequate steps should be taken to reestablish it and to prevent incidental injustice. The author pins his faith largely on group practice. In his article on social medicine published in this issue he has explained his views on group practice so clearly that there is no need to refer to them again in this place. The gross machinery of control is discussed from the point of view

that control should be threefold—that the Commonwealth Government should be coordinative in function, State governments directive, and local authority governments executive within the boundaries of their individual jurisdictions. In this regard the powers of the Commonwealth receive special mention. The book was written before the recent referendum was held and the view is stated that if any general health scheme eventuated it would have to be based either upon an agreed policy executed by the States and assisted by grants-in-aid from the Commonwealth or upon a Commonwealth programme in cooperation with the States. The machinery with its threefold basis, necessary in the author's opinion to establish an efficient and comprehensive general medical service, should, he thinks, be controlled during the initial stages, or permanently if experience warranted it, by a corporate body. This body should, however, be made subservient to the minister and to general government policy at all its stages. In other words control is to be given with one hand and taken away with the other. The author would preserve the doctor-patient relationship; he attaches great but not undue weight to the importance of its maintenance. He believes that a salaried medical service will ultimately be almost universal; he states, however, that any true acceptance of "free choice of doctor" makes it imperative that there should be some elasticity in the scheme. Thus he thinks that both whole-time and part-time doctors attached to the service should be permitted to see private patients.

The following quotation taken from the last chapter just before Robert Louis Stevenson's famous eulogy, which is produced *in extenso*, contains the author's final argument.

If medical men in private practice will disabuse their minds of the misconceptions conjured up by such phrases as "civil service", "bureaucracy", "perfunctory services of salaried men", etc., and will recognise that these arise from a not unnatural tendency to judge service for the nation from its worst examples and individualistic practice from its best; if they will realise that whatever the method of payment (so long as it is fair and reasonable), the future and the nature of the service lies in their own hands now and always to make or mar; if they will realise that among them, if freed from the fear of economic insecurity that binds them to the individual fee system, there are some of the keenest and best trained minds of our community—they will find at their feet an unprecedented opportunity to provide that road towards positive health, along which we must lead our people if, as a nation, we are to survive.

SULPHONAMIDE THERAPY IN MEDICAL PRACTICE.

F. C. SMITH in a recent publication reviews very thoroughly the whole aspect of sulphonamide medication.¹ A brief review of the pharmacology of these drugs is followed by a comprehensive and valuable list of diseases favourably influenced by each member of the group. The dosages, by all methods of administration, are set out and a table clearly shows which are the most suitable modes of administration for the various drugs and diseases. These tables provide a useful guide and reference for both student and practitioner. The newer members of the group, which are probably less toxic, are also described. The pitfalls of therapy are given due prominence, and among them may be mentioned the acquired clinical resistance of an organism due to inadequate dosage. The author gives a very thorough and careful survey of the toxic manifestations which are likely to occur in varying degrees at any time when the drugs have been administered. He stresses the fact that the sulphonamides cannot be given in a hit or miss manner, as their very potency bespeaks toxic properties. The intermittent use of small doses of sulphonamides will lead to drug hypersensitivity in not a few individuals. It must be remembered that this hypersensitivity with its possible disastrous results can also develop after local application of the drug. The promiscuous use of these drugs for mild respiratory infections has afforded questionable therapeutic results, and self-medication for these diseases is to be especially avoided. An appendix contains a short summary of the discovery, development, methods of administration and clinical uses of penicillin. This substance will not necessarily replace the sulphonamides, but, together, the two provide a tremendous advance in therapeutics.

¹"Sulphonamide Therapy in Medical Practice", by Frederick C. Smith, M.D., M.Sc. (Med.), F.A.P.S., foreword by George Morris Piersol, B.S., M.D.; 1944. Philadelphia: F. A. Davis Company. 9" x 6", pp. 379, with illustrations. Price: 30s.

¹"The Theory and Technique of Child Guidance", by P. H. Cook, M.A., Ph.D.; 1944. Melbourne: Melbourne University Press. 8½" x 5½", pp. 136. Price: 8s. 6d.

²"Blueprint for the Health of a Nation", by Sir Raphael Cilento, Kt., M.D., B.S. (Adelaide), D.T.M. and H. (England), F.R.San.I. (London); 1944. 8½" x 5½", pp. 196, with illustrations.

The Medical Journal of Australia

SATURDAY, JANUARY 13, 1945.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

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SOCIAL MEDICINE.

IN spite or perhaps because of the frequent references that have been made in medical journals during recent years to the subject of social medicine, there is need to clarify the commonly held ideas on the subject. Though certain students of medicine and sociology have insisted that present-day emphasis on social medicine is the natural, but somewhat belated, result of the present state of human development, there are many others who have given the matter no more than passing thought. By far the greater majority of those in this group who have had a medical training will give at least academic consent to the general proposition that medicine should be concerned with all the conditions of man and his environment that have a bearing on his mental and bodily health—there may be some medical practitioners who are so set in their ways or so self-centred that nothing will make them look beyond the immediate illness of persons who seek their advice. All the writings on social medicine have been undertaken because an academic consent to the principles of social medicine is not enough. If Australian medicine is to fulfil its destiny on its own initiative and not as an unwilling agent acting at the command of another body with powers of compulsion, academic consent must give place to enthusiasm, resource and audacity. This will not be possible unless all obstacles to success are removed. One of the obstacles operating at the present time is that the aims of social medicine have been to some extent obscured by fear of the methods suggested by some of its more enthusiastic advocates. Another obstacle is the ignorance shown by some of its members of what organized medicine has already done in the field of social medicine. In this issue there appear two papers, one by Sir Raphael Cilento, read at a meeting of the Queensland Branch of the British Medical Association, and the other by Dr. E. P.

Dark, read at a meeting of the New South Wales Branch. Both authors have discussed social medicine in its general implications and both have stated the type of medical practice which in their opinion is best suited to achieve its aims. Sir Raphael Cilento has referred to "group practice within a loosely linked governmental organization, with the greatest degree of decentralization of control and the greatest possible autonomy within the practising medical group" and has quoted from his recently published book, "Blueprint for the Health of a Nation". Dr. Dark has stated his preference for a salaried service, but has added that the acceptance of nothing but the best conditions would be "vitally important". It is natural that these authors should discuss methods of practice as well as its objectives, but for a general discussion on social medicine it should be pointed out that their views are personal opinions only. Social medicine is not the same as what has been called socialized medicine. Writers on the latter subject have nearly always referred to the needs of social medicine, and this is why, as already suggested, the aims of social medicine have been partially obscured. What needs to be remembered is that the ideals of social medicine are compatible with any form of medical practice that is planned on a complete and broad basis and carried on faithfully by those to whom it is entrusted. The Federal Council of the British Medical Association in Australia, acting on behalf of the Branches in the several States, has declared that the inauguration of a salaried medical service for Australia is not in the best interests of either the people or the profession, but it has not ignored the requirements of social medicine. On the contrary readers of this journal are familiar with the long list of additions and improvements to the present type of medical practice thought by the Federal Council to be necessary and set out in its policy. For this reason the remarks of some of those who took part in the discussion following the reading of Dr. Dark's papers were, to say the least, very disappointing. The rebuke administered by Dr. K. S. Macarthur Brown, who occupied the chair, must be looked on as merited, especially when it is recalled that the meeting was a Branch meeting and that the Branch a year or two ago voluntarily raised its membership subscription by one guinea a year so that it might inaugurate a Department of Medical Sociology and Research to educate the public in the very matters that were under discussion. It would appear that some members of the Branches have lost their perspective of this subject and that others are in danger of losing it. The best remedy in the circumstances is a return to first principles, and this may be done by careful perusal of an address recently delivered by Brigadier F. A. E. Crew, Professor of Public Health and Social Medicine in the University of Edinburgh, and published in *The Lancet* of November 11, 1944.

Crew, whose lecture was entitled "Social Medicine: An Academic Discipline and an Instrument of Social Policy", begins with the generally accepted statement that modern medicine includes within its province all that pertains to man's well-being and that with this there must be taken into account not only the make-up of man, but also his external world and his interaction with it. In the external world of the individual nothing is of greater importance than the existence of other individuals of the same species, and it is in the interrelationships of individuals within the group that the major causes of harmony and dis-

harmony are to be found. Further, in this external world man-made institutions are not less significant than are the components of his natural environment. For these reasons social medicine is actively developing. But Crew adds another reason. He points out that many of the ills affecting individuals and communities are directly due to the fact that the development of the different fields of science and the application of the different sciences to human and social affairs have been very unequal. So much attention has of necessity been paid to physical sciences that knowledge of them is vast, and by application of this knowledge man has effected profound and rapid changes in his environment. This has been accomplished without any extensive knowledge of human and social biology, of sociology and of the psychology of communities. The disease engendered by the disharmony between man and the social structures that he has created has become "a major preoccupation of medicine". Crew thinks that "the present combination of vast knowledge of inanimate things and an almost complete ignorance of ourselves constitutes a danger that may well destroy us". With this introduction he defines social medicine as medical science in relation to groups of human beings. In his opinion this definition gives to social medicine the dignity of an academic discipline in its own right, distinguishes it from clinical medicine and makes it clear that it is not circumscribed by what is known as preventive medicine. Clinical medicine deals with the sick individual. Preventive medicine is "medical science applied to the elimination of sickness by appropriate social and collective procedures based upon the findings of clinical medicine and the ancillary sciences. . . ." Crew then goes on to state that social medicine, rooted both in medicine and in sociology, includes both preventive medicine and industrial medicine (in his opinion a variant of toxicology), but differs from them "in that it is not merely or mainly concerned with the prevention and elimination of sickness, but is concerned also and especially with the study of all social agencies which promote or impair the fullest realisation of biologically and socially valuable human capacities". In other words it includes the application to problems of health and disease of sociological concepts and methods.

Once the nature of social medicine is determined, its problems may be defined. The definition that has been given shows beyond any question that medicine cannot pass the problems by and leave them to those in other spheres. To name the problems should not be difficult. Crew states that they are of two kinds. One is concerned with the definition of the social environment in relation to the prevalence of morbidity and mortality; the other is concerned with the social agencies which are propitious to maximum health in the widest sense of the term. Crew discusses the importance of statistical study of disease; but he does not mean a cold mathematical study divorced from reality. The need is for young men and women who have, in addition to mathematical ability, a keen interest in humanity and its affairs. "Mathematical ability is no substitute for scientific interest in the social structure." Another need on which Crew insists is that for a science of human ecology—a study of man's habits, mode of life and relations to his surroundings and his fellow men. This, of course, is the basis of the whole subject. Crew holds that social medicine in the army has given great

scope for the study of human ecology, and there is no doubt that army requirements have provided unequalled opportunities for the study of the whole man in relation to his environment. Whether the best use has been made of these opportunities and whether the information will be extracted and preserved in usable form remain to be seen. However this may be, Crew is probably right when he declares that the university which in the immediate future contributes most to the advancement of learning and to human betterment will be the one that develops the greatest institute of human ecology. Of the problems falling into Crew's second group, those concerned with the "sociology of positive health", a great deal need not be written—readers are in a position to name them for themselves.

With this admittedly short and inadequate general exposition of the scope of social medicine in the light of Crew's address, and with a recommendation to study the views on the broader aspects of social medicine expressed by the two authors writing in the present issue, a final plea must be made. The plea is for emphasis on unity wherever unity is possible. There is ample scope for combined effort by those who hold even the most divergent views on the future of medical practice. Medical life must be lived to the full even under present conditions. This means that there is no need to wait for the sudden emergence of a perfected, or even a new form of medical practice. That most of the advances already made in social medicine can be credited to the medical profession is a fact beyond dispute, but a very great deal more remains to be done. More can be done if the most is made of opportunities as they arise from time to time under present conditions and if further opportunities are sought. To sit and wait for opportunities in this matter is to commit moral suicide. Confusion need not be caused, chances of making an advance should not be missed, by differences of opinion on another matter, however important it may be and however closely it may be related to the question of the moment.

Current Comment.

SWEATING OF THE PALMS.

RECENT experiences in tropical service have interested numbers of medical men in the problems relating to sweating, but when it comes to making critical studies more than simple observation is required. J. J. Silverman and V. E. Powell in two studies on palmar sweating enumerate no less than ten techniques which have been employed in the measurement of sweat.^{1,2} Of these, colorimetric methods appear to be most generally favoured, and several techniques have been used, depending upon colour changes activated by the effect of moisture on various chemicals. Silverman and Powell have used ferric chloride in interaction with tannic acid or potassium ferrocyanide. They find that this method is simply and economically applied to areas such as the palms and readily permits photographic record; further, the test is a quantitative measure of sweat. The reacting salt is applied on treated paper, after the part to be tested has been thoroughly dried by a blower. Contact of the test paper with the skin is maintained for three minutes, and the

¹ *The American Journal of the Medical Sciences*, September, 1944.

² *Psychosomatic Medicine*, July, 1944.

amount of sweat excreted is estimated by the size and intensity of the pattern found on the paper. Palmar sweating interested the authors on account of its relationship to emotional and sensory stimuli. They quote a writer of the seventeenth century who observed that violent mental agitation even in a body at rest produced more sweating than physical exertion in a person mentally calm. Moistening the palm is, they point out, of physiological significance as a prelude to physical and mental exertion or stress. They discuss the neurological aspects of sweating, with its known relationship to cortical or diencephalic stimulation, and its importance as an indicator of the pharmacological action of certain drugs which have an autonomic action. Sweating of the palm is of particular interest, however, since it does not run parallel to sweating from the general body surface. Krause is quoted as estimating that there are twice as many sweat glands per given area of the palm as on the dorsal aspect of the hand, four times as many as on the chest, and five times as many as on the back or buttock. Further, the peculiar ridged patterning of the palmar sweat glands ensures that the secretion is from five to ten times more active functionally than that on the body surface. It is interesting that sweating of the palms is not augmented by exposure of the body to a high temperature, but yet the working out of a simple arithmetical problem may increase it perceptibly. In anxiety states it is particularly noticeable, as well as in diseases like toxic goitre in which other emotional disturbances occur. Da Costa over seventy years ago, in describing what has since been dubbed neuro-circulatory asthenia, referred specially to "inordinate sweating of the hands" in some cases. Silverman and Powell made special studies on 1,160 patients drawn from the medical, surgical and neuro-psychiatric wards of an army general hospital, on 100 patients discharged from the services for various disabilities, and on 71 controls, who were members of the staff. Of the patients, 83% showed a strong or intense sweat response, whereas 78% of the controls showed only a faint to moderate response and 32% a strong or intense response. Of the discharged patients, 77% showed a response graded as strong or intense. One interesting observation is quoted from Zanuck, the film producer, who remarked that during the Tunisian campaign, while every man admitted fear under bombing or shell-bursts, "the soldier to worry about is the one who worries before things happen and continues to sweat and look pale and drawn after they have happened".

The claim of the authors is that their studies have confirmed by actual proof the importance of sweating as an autonomic or cholinergic response related particularly to emotional activities. It is always heartening to the clinician to feel that in the realm of simple observation he still has very much that is of distinct value to contribute to that general summing up which we call diagnosis.

THE TREATMENT OF FURUNCULOSIS.

It may be doubted if there is anything fresh to be said about boils, unless it is in relation to the use of penicillin. But Philip B. Price in a brief article on furunculosis claims that recurrence of the lesions may be prevented if due care is bestowed on cleansing of the skin after the healing of one and before another has time to appear.¹ He maintains that it is the exact technique of the method that is important. He has published other articles on the bacterial flora of the skin and the methods of disinfection of the skin in which he has set forth the belief that healthy skin can be bacteriologically cleansed by a solution of ethyl alcohol exactly 70% by weight. He further states that, while it is known that the application of iodine or other skin antiseptic cannot render the skin sterile, continuous application of this strength of alcohol is effective if made by gentle friction over an appropriate period. This period is

twenty minutes. It is probable that every doctor who treats boils advises that some detergent or antiseptic be used on the surrounding skin, but the experience of most has been that in numbers of cases successive crops of boils appear and may in some cases resist all forms of treatment including vaccines, staphylococcal toxoid, preparations of tin and manganese, and even many quack remedies. Price's present communication is based on experience with a large number of patients on whom the alcohol cleansing method has been used, but his claims rest chiefly on eleven patients who had suffered from a succession of deep-seated boils for a period of weeks or months, and with whom other methods had failed to prevent recurrence. In these cases during an interval period the skin was thoroughly and gently rubbed for twenty to twenty-five minutes with gauze soaked in 70% alcohol, and no recurrences have occurred during the succeeding two or three years. The simplicity of this method invites its trial in such cases.

PATULIN TESTED AND FOUND USELESS.

In the issue of February 19, 1944, attention was drawn in these columns to articles published in *The Lancet* of November 20, 1943, on patulin and its use in the common cold. It will be remembered that patulin was described as a metabolic product of *Penicillium patulum* Bainier and that its use in the treatment of the common cold was the result of tests made by W. E. Gye on himself when he was suffering from a severe cold. Gye's recovery was dramatic and other successes were obtained. The remedy was then tested by W. A. Hopkins in a naval establishment and a large number of cures were effected. The general conclusion was that large-scale confirmatory trials should be undertaken before the substance was released for general use. The wisdom of this decision has become clear, for the trials have been held and patulin has turned out to be a failure. The *coup de grâce* has come from two investigations,¹ one carried out in the army by J. M. Stansfeld, A. E. Francis and C. H. Stuart-Harris, and the other by the Patulin Clinical Trials Committee of the Medical Research Council. In the army investigation one hundred men were treated during the season of autumn colds. Patulin was given to fifty and a control solution to fifty. The groups of persons were comparable in regard to age, symptomatology, duration of the cold before and after treatment, and the bacteriological findings. Neither the investigator nor the patient knew whether patulin or control solution was used and all results were obtained before any analysis was begun. Nine of the patulin-treated group and 14 of the controls manifested improvement on or after the second day; the numbers before the end of the second day were six and eleven. The numbers not affected in the two groups were 28 and 29. The colds lasted for more than fourteen days in 29 cases in each group. The persons tested by the Medical Research Council committee were much more numerous. No less than 1,449 persons were treated and the records of 1,348 were available for analysis; 668 were treated with patulin and 680 with a control solution. The results of treatment were very similar whether patulin or the control solution was used. At the end of 48 hours the percentage of "cured" in patulin and control groups was 13; the percentage of "cured" and "improved" together was 73 for the patulin group and 77 for the control group. The conclusion that patulin cannot be looked on as a cure of the common cold cannot be escaped, even in spite of the initial success reported by Hopkins. To try to explain the early successes it would be necessary to examine in detail the extent of the "cold"—the involvement of different parts of the respiratory passages and sinuses. It would also be necessary to discuss the types of organism responsible in each instance, details of administration and so on. However, the Medical Research Council series alone is so large and the account of the work is so convincing that the verdict against patulin must stand.

¹ *The Journal of the American Medical Association*, April 22, 1944.

¹ *The Lancet*, September 16, 1944.

Abstracts from Medical Literature.

PHYSIOLOGY.

Work in the Heat as Affected by Intake of Water, Salt and Glucose.

G. C. PITTS, R. E. JOHNSON AND F. C. CONSOLAZIO (*The American Journal of Physiology*, September, 1944) report their observations on human subjects. They state that the best performance of fully acclimatized young men on a good daily diet, performing intermittent hard work in the heat, is achieved by replacing hour by hour the water lost in sweat. Any amount of water considerably less than this leads in a matter of hours to serious inefficiency and eventually to exhaustion. Replacement of salt hour by hour in such circumstances has no demonstrable advantage. Administration of glucose is of little if any advantage when compared with the great benefit of large amounts of water. When practical problems of transportation and supply, lack of appreciation of the importance of water and salt, or the anorexia which is so common in hot environments, interfere with adequate intake, it may become desirable to supply salt in drinking water, or less satisfactorily, in the form of tablets.

The Diuretic Effect of Gelatine Solutions.

C. E. BRIDGER *et alii* (*The American Journal of Physiology*, September, 1944) have studied the effect of the intravenous administration of gelatine to dogs. Using normal unanesthetized dogs, they showed that the intravenous injection of solutions of 0.9% of sodium chloride or autoclaved 6% gelatine in saline solution produces an increase in urine flow which returns to the control level usually within six hours. Approximately 50% of the fluid injected is recovered as excess urine during this period. Unautoclaved gelatine or "Salyrgan"—"Theophylline"—saline solution caused a marked increase in urine flow lasting about nine and six hours respectively. With the former the mean value for the excess urine flow is 169% of the volume injected, while with the latter it is 250%. In five experiments a combination of these two gave a value which was significantly less than that which would have been expected if the two effects were independent. It is concluded that 6% unautoclaved gelatine solution is a diuretic when given intravenously.

Plasma, Gelatine and Saline Therapy in Experimental Wound Shock.

W. W. SWINGLE AND W. KLEINBERG (*The American Journal of Physiology*, July, 1944) describe a method of producing a standardized shock in dogs by the use of 0.22 long-range high-speed shot shells. With this technique, plasma, gelatine and saline solution were tested as therapeutic agents in experimental wound shock involving severe muscle trauma plus external and internal hemorrhage at the site of injury. Of 43 deeply anesthetized control dogs not receiving treatment of any kind, 39 died in shock. The anesthesia was maintained for eighteen to twenty-

four hours following injury or until the animals died. Shock induced by the method employed is characterized in general by a lack of marked haemoconcentration, drastic fall in blood pressure and loss of whole blood. The plasma volume declined approximately 44%. Transfusions of plasma given intermittently as five injections of 6-6 cubic centimetres each over a seven-hour interval prevented shock in 11 of 15 animals. Single massive infusions of plasma given within ten minutes of injury did not prevent shock in 12 of 14 animals used. Much of the injected plasma was rapidly lost into the injured area. Intermittent infusions of gelatine and 0.9% saline solution were both effective in preventing shock, although gelatine was somewhat more efficacious. Of 26 dogs receiving infusions of gelatine, 16 or 61.7% survived indefinitely, whereas of 23 saline treated dogs, 47.8% failed to exhibit shock. A single massive infusion of saline solution prevented shock in but three of a group of ten dogs. The administration of small intermittent plasma, gelatine and saline infusions over a period of hours apparently is a more effective method of preventing shock than the giving of a single massive infusion immediately following injury.

The Inhibitory Effect of Acid in the Intestine on Gastric Secretion.

I. J. PINCUS, M. H. F. FRIEDMAN, J. EARL THOMAS AND M. E. REHFUSS (*The American Journal of Digestive Diseases*, July, 1944) state that acid introduced into the small intestine of Pavlov-pouch dogs inhibits gastric secretion in response to a meal, provided an adequate degree of intestinal acidity is attained. Marked inhibition of secretion occurs if the pH of the intestinal contents is about 2.5 and almost complete depression when the pH is 2.0 or lower. This regulatory effect of intestinal acidity on gastric secretion is not present when the secretion is provoked by histamine. The role of this regulatory mechanism during the secretory period following a meal and the various factors which may be involved are discussed. The experimental results point to the existence of a mechanism for the autoregulation of the gastric secretion which is brought into play when the acidity of the intestinal contents reaches levels which may be harmful to the intestinal mucosa. The role of such a mechanism during the secretory period following a meal may be of considerable importance. During the digestion of a meat meal by the dog the acidity of the duodenum near the pylorus is generally near pH 4, while the content of the antrum of the stomach has a reaction between pH 2.0 and 3.0. The existence of a threshold level of intestinal pH for inhibition of gastric secretion which the authors' studies show to be within the pH range of the antral contents is thought by them to be suggestive. One of the authors has suggested that the "receptive relaxation" of the duodenum which occurs when the stomach empties itself, results in the accumulation of duodenal contents in the vicinity of the pylorus. Occurring at the moment of exit of the acid gastric contents, this would facilitate quick dilution and partial neutralization of the chyme (to about pH 4.0). It is supposed that, should this neutralizing ability of the duo-

denal contents be ineffective, then a second mechanism may come into action, one which arrests the secretion of the acid at its source.

The Effect of Anaemic Anoxia on the Motility of the Small and Large Intestine.

E. J. VAN LIERE, D. W. NORTHUP AND J. C. STICKNEY (*The American Journal of Physiology*, September, 1944) report a study of the effect of haemorrhage (anaemic anoxia) on the motility of the colon in lightly barbitalized dogs and of the small intestine in unanesthetized animals. Following a significant haemorrhage the longitudinal muscles of the colon, as recorded by an enterograph, may show a decrease in the height or in the number of contractions, a change in tone or some combination of these factors. A few of the animals studied were highly resistant to the effects of haemorrhage; however, the majority showed a depression in activity of colonic musculature after they had lost a quantity of blood equal to 1.5% of their body weight. In a group of dogs subjected to a haemorrhage equivalent to 3% of their body weight, it was observed that a powdered charcoal-acacia mixture, given by stomach tube, had traversed 74% of the total length of the small intestine at the end of thirty minutes. In contrast, the value for the control group was 55%. The difference was highly significant statistically. No entirely adequate explanation can be offered why anaemic anoxia accelerated the propulsive movements of the small intestine. The most plausible explanation in this instance is that, contrary to the general rule, haemorrhage stimulated the parasympathetic nerves more than it did the sympathetic.

Haemolytic Depression of Erythrocyte Number and the Feeding of Fat with Choline.

J. E. DAVIS (*The American Journal of Physiology*, September, 1944) states that Johnson and others have shown that the feeding of fat to dogs increases the fragility of their red cells and causes an increased destruction of erythrocytes as indicated by an increased bile pigment output. The haemolytic agents from fat are presumably soaps and fatty acids which have escaped resynthesis into fat during absorption. The author has shown that the daily feeding of choline hydrochloride to dogs for five to seven days has no significant effect on their erythrocyte counts. Recently it has been found that the continued daily feeding of choline to dogs for eight or more days causes a significant depression of the red cell number, which appears to be due to depression of erythropoiesis. In this paper the author states that the daily oral administration of sixty grammes of lard and ten milligrammes per kilogram of choline hydrochloride to four normal dogs caused rapid, significant reductions in their erythrocyte counts and haemoglobin percentages. In three of the dogs, the erythrocyte numbers were observed to be diminished by 15% to 27% within the first twenty-four hours. Icterus indices were significantly elevated concomitantly. Discontinuation of fat feeding alone, or of both fat and choline administration, resulted in rapid returns of erythrocyte numbers to normal. These results are interpreted

by assuming that the choline acts as a buffer on the bone marrow in preventing any great acceleration of erythropoiesis, while the fat furnishes haemolytic agents (perhaps soaps and fatty acids) which increase red cell destruction.

BIOCHEMISTRY.

"Atebrin."

M. SILVERMAN AND E. A. EVANS (*The Journal of Biological Chemistry*, August, 1944) have studied the effects of spermine, spermidine and other polyamines on the growth inhibition of *Escherichia coli* by "Atebrin". Increase in pH markedly increases the bacteriostatic activity of "Atebrin". This is associated with a greater retention of the drug by the cell at the higher pH values. A variety of protein digests contains substances relieving "Atebrin" bacteriostasis in *Escherichia coli*. Witte's peptone is the most active of these media. This same peptone in a concentration of 20% per millilitre greatly increases the growth of *Lactobacillus casei* in the complete medium of Landy and Dicken. The naturally occurring amines, spermine and spermidine, are the most active antagonists of "Atebrin" among the known factors tested. Concentrations of spermine higher than 0.00025 M inhibit the growth of *Escherichia coli*; spermidine is non-toxic at a concentration of 0.002 M. *Escherichia coli* cultures resistant to "Atebrin" also possess increased resistance to quinine. The bacteriostatic effect of quinine may be antagonized by spermidine. The oxidation of spermidine by lyophilized preparations of *Pseudomonas pyocyanea* is inhibited by both "Atebrin" and quinine. This inhibition may be eliminated or reduced by increased spermidine concentrations. It is suggested that "Atebrin" inhibits the growth of *Escherichia coli* by interfering with reactions involved in the synthesis, the metabolism, or the synthesis and metabolism of spermine and spermidine.

Penicillin.

THE activity of penicillin combined with other antistreptococcal agents towards β -haemolytic streptococci *in vivo* has been investigated by G. Sooboo and R. J. Schnitzer (*Archives of Biochemistry*, September, 1944). A single subcutaneous injection of a subtherapeutic dose of sodium penicillate (two to three units) was combined with equally small doses of sulphonamides and related compounds as well as two different antistreptococcal acridine dyes and a gold compound ("Myochrysin") in experimental streptococcal infections of white mice. It was found that small doses of penicillin have a striking synergistic effect on the activity of sulphapyridine. An equally good effect was observed if penicillin was given together with sulphanilamide or *p*-aminobenzoic acid. No activity was found when penicillin was combined with *p*-aminobenzoic acid. Penicillin did not show a combined effect with acriflavine, 2-nitro-5-(γ -diethyl-amino- β -hydroxypropylamino)-7, 8-dimethoxyacridine, or with "Myochrysin". Penicillin counteracts the inhibiting activity exerted by *p*-aminobenzoic acid on sulphanilamide. Unger's

synergistic phenomenon is dependent on the amount of sulphanilamide. If the dose of the inhibitor is too high, the activity of the synergistic system drops gradually to zero. No evidence was found which would indicate the formation of an active reaction product of sulphonamides and penicillin.

Thiamin Deficiency.

H. A. WAINMAN AND K. B. McCALL (*Archives of Biochemistry*, May, 1944) have reported a study of thiamin deficiency in the monkey. The thiamin-deficient monkeys show a drop in weight, decreased food consumption, general muscular weakness, loss of reflexes, convulsions, incoordination, increasing cachexia, signs of cardiac insufficiency, prostration and death. No vomiting and episthotonus were observed in the 29 animals studied for periods of from two to nearly thirteen months. The minimum thiamin requirement for maintenance of monkeys weighing about three kilograms is 15% per kilogram of body weight or approximately 40% per day. The minimum requirement for growth is between 25% and 30% per kilogram per day, or a total of about 75% to 100% per day. A distinct lowering of the heart rate has been recorded through electrocardiographic studies uncomplicated by the influence of decreased food intake. A definite decrease in the height of the R wave and inversion of the T wave were observed with no change in the P-R interval. The "pyruvic acid" level in the blood of normal monkeys is higher than the corresponding figure for the pig and man, but in thiamin-deficient monkeys it is sharply increased.

MEDICINE.

Recumbency in Heart Disease.

SAMUEL A. LEVINE (*The Journal of the American Medical Association*, September 9, 1944) discusses some harmful effects of recumbency in the treatment of heart disease. Bed rest, in the case of the cardiac patient, decreases the basal metabolism, slows the heart rate and may lower the blood pressure, and all this decreases the work of the heart. A factor often overlooked is that recumbency also encourages venous return to the heart; as the lower part of the legs is elevated and approximates the level of the right side of the heart, tissue oedema more readily disappears through lymphatics, capillaries and venules, and in consequence the work of the right side of the heart is increased rather than decreased. When the left ventricle is so weak that it cannot keep pace with the increased output of the right ventricle during the days of recumbency, pulmonary congestion and resultant breathlessness may actually increase, and, therefore, bed rest for a while may impose greater rather than less work on the heart. The clinical events that take place during an attack of nocturnal cardiac dyspnoea are described, and the reader is reminded that although the patient has long been mindful of the harmful effects of the bed and has dreaded the nights, the physician would generally insist on a strict bed regimen in such cases. The writer states, however, that in most

such cases temporary ill effects are counterbalanced and masked by the effect of the various methods of treatment employed. It is only when the entire programme of treatment is ineffective that the deleterious results of bed rest are evident. The author has often noted the appearance of pulmonary rales and hydrothorax after ordering an ambulatory cardiac patient to bed. In such a case, the nights are made comfortable with the use of morphine until the effects of digitalis, diuretics, diet, phlebotomy, and other measures have improved the situation so that pulmonary congestion clears and breathing becomes normal. But all the same the progress is downhill because the customary treatment is not effective enough to undo the harm done by the recumbent posture. Peripheral oedema may disappear, but a thoracentesis may be necessary for a right hydrothorax. There may be several litres of latent oedema without pitting, and fluid in the legs may be unsightly but does comparatively little harm, whereas fluid in the lungs is a dangerous handicap. Fluid often shifts from the feet and ankles to the lower part of the back in decompensated cardiac patients in bed. An increase in blood volume is one of the most constant findings in congestive heart failure and effective treatment is always accompanied by a decrease of blood volume towards normal. Recumbency produces, at least temporarily, the undesirable effect of increasing the total volume of blood and as a result the work of the heart. It is therefore held that, although the fundamental principle that rest is beneficial for the heart remains undisputed, recumbency by some cardiac patients may actually increase the work of the heart. This effect is often temporary. Other difficulties may follow prolonged bed rest both by cardiac and by non-cardiac patients. Urinary retention from an atonic bladder and prostatic obstruction may develop in elderly men, without subsequent infection from catheterization; others may develop hypostatic pneumonia, but a much more frequent and important occurrence is the development of thrombophlebitis of the legs with subsequent pulmonary embolism. Immobility of the legs, abdominal distension with pressure on the iliac veins, and the sluggishness of the circulation in cardiac patients all result in slowing of the blood flow through the legs which is conducive to venous thrombosis. This is especially true of obese and orthopaedic individuals. Any phlebitis of the leg should be detected early, and if such a patient has one pulmonary embolism, ligation of the vein is advised. The author advises that some severely ill cardiac patients, especially those with nocturnal dyspnoea, should not be left flat in bed until active cardiac treatment has been well advanced in improving the circulation. During these early days, they may sit in a chair and be urged to exercise their legs or take short walks in their room several times daily. The bed should slant downwards from head to foot, and be so arranged that the patient's back and hips are higher than the feet. At times it is even wise to take a critically ill cardiac patient with severe pulmonary oedema deliberately out of bed and place him in a chair with feet hanging down, so as to shift the fluid from the lungs to the legs.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on October 26, 1944, at the Robert H. Todd Assembly Hall, British Medical Association House, 135, Macquarie Street, Sydney. DR. K. S. M. BROWN, the Past President, in the chair.

Sociological Medicine.

DR. E. P. DARK read a paper entitled "Sociological Medicine: Its Meaning and Scope" (see page 31).

DR. DOUGLAS ANDERSON said that the meeting was something of an occasion in the annals of the Section of Sociological Medicine—it was the first occasion on which the section had been invited by the Branch to contribute the only paper on the agenda. Dr. Anderson said that he was speaking for every member of the section when he expressed pleasure that Dr. Dark had been able to represent them. Dr. Dark was a busy man, like most country doctors busy to the point of being harassed; but he was in Australia a pioneer of coherent thought on the subject of sociological medicine. Dr. Dark's writings and pronouncements up to the present time had been like test-tube cultures of some microorganism which could be of great value to mankind, and the present meeting could be likened to the occasion of the inoculation of one of those cultures into a juicy and suitable medium, in which Dr. Anderson hoped it would flourish in the future. The development of sociological medicine had been hindered by a good deal of apathy and even of ridicule, so there were obviously some antibiotic substances in the broth. Dr. Anderson said that an example of this attitude had recently been given in a biography which had lately had a great deal of popularity—"The Horse and Buggy Doctor". Medical sociology was written off as a new and superfluous thing, and it was predicted that soon there would be talk of "medical hemstitching" and "medical d'oyley making" for the treatment of elderly female patients. Dr. Anderson said that similar ideas about sociological medicine were held by many respected people, who seemed to be "horse and buggy minded"; but the present was not a "horse and buggy" age. A great deal of the suspicion with which sociological medicine was regarded was due to a confusion between sociological medicine and socialized medicine. There was a great difference between the two, although they had a certain common ground. Sociological medicine was defined in one of the rules of the section, the one setting out the object of its formation—it was to study the laws, manners and customs of society in the light of medical knowledge in order to combat disease and improve the health of the community. The aim of the section was to seek out facts and to enlighten the medical profession, the people at large and the governments. If the section had a motto it might well be:

In a contemplative fashion
And a tranquil frame of mind
Free from every kind of passion
Some solution let us find.

The necessary passion would come soon enough from those who were enlightened. As Dr. Dark had said, the medical profession should keep out of the political arena as a corporate body; otherwise it might burn its fingers and impair the good work which it could do. One other thing remained to be said: those present should not imagine that sociological medicine was anything new, although it had gained a good deal of impetus in recent times. A revolution was taking place. Every doctor worthy of the name had been practising sociological medicine for years. If he had been treating his patients as people and not as cases. There was scope for sociological medicine on several planes; the first was the community plane, if they were concerned with the health of the community at large; the second was the group plane, if they were concerned with the health of certain groups of people, such as workers, prisoners or children; the third plane was the individual plane, if they were concerned with their patients as individuals. The section hoped to pursue its aims on every one of these planes. Dr. Anderson hoped that the section would soon hold a meeting on the subject of housing. The section would do much valuable service to medicine if it caused attention to be paid to the external environment of the patient—laws, manners and customs—and not only to his internal environment. A doctor who was interested in people as people

never grew stale, but one who was interested only in his patients' insides was often a grim and jaded fellow.

DR. C. H. JAEDE said that Dr. Dark was to be congratulated on his courage in tackling the subject as he had done. Sociological medicine was just as important a subject or classification of medicine as were ophthalmology, gynaecology, obstetrics and so on. It was even possible to divide sociological medicine into its diseases, which could be considered according to their aetiology, seasonal occurrence, general description, prognosis and treatment. Possibly the best education for any doctor to undergo, so that he would learn to appreciate the importance of the subject, was to practise in an industrial or congested area. Dr. Jaede said that it had been his lot to practise in such an area for fifteen years. Although he had often bewailed his lot, yet he had become interested in the life of the working people in his practice and in their bad conditions. At times he felt hopeless when he tried to treat sociological diseases. He proposed to discuss two of them only. The first was what he called a deficiency disease—the falling birth rate. Apparently, the more highly civilized a community became, the more rapidly its birth rate decreased. With the advent, popularizing and advertising of contraceptives, which had been made available to the people at more or less reasonable expense, with the removal of the inhibition affecting the going and asking for these implements of destruction, the birth rate had fallen with a bump. Dr. Jaede said that when first he went to his present practice, the miscarriage rate was probably about 400 per annum. At the present time the rate was not more than 20 per annum. That fact undoubtedly had its cause in the prevalence of contraceptives. As to the aetiology of this deficiency disease, Dr. Jaede said that if the patient was asked why she had no family, or why she had only one child, she would reply that she could not afford any more, or even one. The usual story was that the couple were saving to buy their home, and when they could afford it they would have a child. Those who had two children might announce that it cost enough to bring up two in a reasonable fashion. In other words, one cause of the falling birth rate was an insufficient amount of money to bring up a family to the satisfaction of these humble people. They did not want much; but what they had was insufficient to support a family of more than three. Dr. Jaede said he was afraid that that was not the whole aetiology of the falling birth rate, but it was sufficient for the moment. The other interesting sociological disease comprised those mild degrees of neurosis amongst people in general, which were particularly evident in working-class areas during the years of the financial depression. Men and women went to him complaining of all kinds of aches and pains and exhibiting all kinds of hysteria. Dr. Jaede was afraid that doctors looked on them only as a nuisance. But if they had been able to appreciate the attitude of wives during the depression, when a wife had the barest of necessities to keep her family going, when she constantly wondered whether she had enough to feed the baby or even to take a child to hospital—if they realized that these conditions went on year after year, then they would understand that this disease was one that could well be placed in the category of sociological medicine. Even if they went still further and looked into those people's hearts after the depression had gone, and appreciated the fact that in the future another such depression might possibly fall to their lot, they could imagine what mental illness was caused amongst the people. Dr. Jaede said that he had referred to only two diseases. The treatment also must interest medical men; not necessarily as a body, but as private individuals, they must study subjects other than those of medicine.

PROFESSOR C. G. LAMBIE said that he had been delighted to listen to Dr. Dark's paper, more so since Dr. Dark represented a branch of the medical profession for whom he had the greatest respect—the general practitioner. The fact that a general practitioner had been responsible for being the chief spokesman for the subject of sociological medicine was extremely significant. Anyone who had been in practice could not help being impressed with the fact that the social diseases were the fundamentals. Disease was a mere incident in the reaction between the organism and its environment; it was the social conditions of the people which were the *fons et origo* of disease. Professor Lambie said that the subject was one which he was forever preaching in season and out of season, from the student's first lecture until his last. In the wards he was always anxious to impress on the students and resident medical officers the importance of social conditions in producing disease, and in treatment, the futility of having patients admitted to hospital and treated for a time, only to allow them to return to the

conditions which had been responsible for the disease. One remedy was the hospital social service. English hospitals had been the pioneers in the field of almoning, but it had really developed in the United States of America. Professor Lambie asked Dr. Dark to define the scope of his paper. He said that most medicine was sociological medicine; most diseases were due to social causes. He wondered whether sociological medicine was not rather an attitude towards medicine which should permeate the whole of the medical curriculum, the whole of medical practice. Much of it went into hospital practice, much into psychiatry and much into preventive medicine. Sociological medicine was becoming a subject; a chair of social medicine had been founded at Oxford and another at Sheffield, and at Edinburgh the chair which was formerly the chair of public health was now the chair of social medicine. In the Goodenough report great stress had been laid on social medicine. It was a difficult subject to define.

DR. GUY GRIFFITHS said that in recent years he had from time to time had the pleasure of reading papers by Dr. Dark, and had once met him for a few minutes, but this was the first occasion on which he had heard him address a meeting. Dr. Griffiths supported Professor Lambie's appreciative remarks. However, Dr. Griffiths did not agree with everything that Dr. Dark had said; he thought Dr. Dark a little too severe against society and a little too severe against the medical profession. Doctors had not neglected all opportunities to the extent that Dr. Dark had suggested. Dr. Dark had said that they were all interested in the tubercle bacillus, but not in the conditions under which it thrived and invaded the human body. Dr. Griffiths reminded Dr. Dark that fifty years ago or nearly Sir William Osler, in his text-book, talked of the seed and the soil in tuberculosis; the tubercle bacillus was the seed, the human body was the soil in which the seed thrived. The edition of the book to which Dr. Griffiths was referring was dated 1898. Dr. Griffiths suggested that Dr. Dark on another occasion might consider whether it would not be wise to modify the strength of his opinion. Dr. Dark had spoken of the mental, moral and physical harm inflicted on people by society. Dr. Griffiths said that in the present condition of society people did suffer such harm; but he doubted whether it was fair to say that it was inflicted on them by society. They were subjected to it by world conditions, but perhaps society was not entirely responsible. The harm might be due to a deficiency of resources in society, and society should not be held responsible to that extent. Dr. Dark had suggested that the general practitioner should devote himself more to prevention, so that in the future he might devote himself less to the treatment of disease. Dr. Griffiths suggested that in all medical life and in all medical practice back to Hippocrates, the medical practitioner had been constantly preaching prevention, constantly teaching the parents of children suffering from infectious diseases how to prevent those diseases. Dr. Griffiths doubted whether any public effort in the prevention of infectious diseases had amounted to the united efforts of the medical practitioners. He thought that not even the efforts of public health departments had been more effective, even if they had been more spectacular. Dr. Griffiths thought Dr. Dark's statement a little unfair, and he went further and protested against his implied slur on the medical profession, that doctors had a vested interest in disease and that they should have a vested interest in health. Dr. Griffiths held that, even if medical men made their livings from sick people, they did honestly attempt to prevent disease, and that their chief interest was in the prevention of disease, in the establishment of health, rather than in the continuance of disease. However, his criticisms of Dr. Dark's paper all referred to minor points, and he had thought the paper eloquent and indicative of great thought and research. Dr. Griffiths said that Sir Charles Blackburn, in an address given in that hall a short time earlier, had told those present how unfortunate it was that the government of the day did not give more consideration to the views of the medical profession in their proposed establishment of a vast scheme of socialized medicine. Dr. Griffiths suggested that, even if those present did not agree with everything that Dr. Dark had said, even if they had not learnt much, yet the knowledge might go out to the public that there was an interest among the members of the Association in sociological medicine; that interest might well influence the Commonwealth Government to give more consideration to the views of the medical profession in the establishment of a national medical service than it had done in the past. For that reason, if for no other, Dr. Dark had earned the gratitude of the New South Wales branch of the British Medical Association by the address he had given. Dr. Griffiths concluded his remarks by saying that he wished to complete Dr. Anderson's quotation and to say that "some solution we will find".

DR. R. C. WINN commented on Professor Lambie's statement that sociological medicine impinged upon every branch of medicine. Dr. Winn said that he agreed that that statement was true, even in the field of psychoanalysis. Some years earlier he had come upon a review of a book by Dr. Williams, who had visited Soviet Russia, and who stated that the incidence of manic-depressive psychoses had been greatly reduced in that country since the introduction of the Soviet system. Dr. Winn thought that the reduction might be due to the lessened anxiety and the increase in security felt under the new conditions. With regard to the first world war, it had been stated that hysterical conditions were more common amongst private soldiers and other types of neuroses were more common among officers. Those points, taken in conjunction, made one wonder whether the type of neurotic illness "chosen" by any particular patient which Freudian psychoanalysts had never been able to explain adequately might have a sociological basis. Because the question was difficult to solve by psychoanalysts on account of the limited number of patients seen by them, Dr. Winn considered that Freudian analysts would appreciate information on that subject from the Section of Sociological Medicine.

DR. E. S. A. MEYERS also congratulated Dr. Dark on his paper. He said that he could make no comment on the subject of psychological medicine, because he felt like a tiro after hearing Dr. Dark's paper. However, he thought it a great pity that the attendance at the meeting was so small. Dr. Meyers realized that doctors were busy people; but he thought it surprising, in view of all the discussion on the subject that had been taking place, that more members were not interested. That remark applied particularly to members of the Branch Council. Dr. Meyers had only one comment to make on Dr. Dark's paper, and that concerned his remarks on a social revolution. Dr. Meyers believed that a social revolution was taking place at the present time; but he did not think many people realized that such a revolution was in progress. One often heard expressed a desire for evolutionary change; but Dr. Meyer thought that any change in the practice of medicine must be revolutionary.

DR. L. E. HEWITT also expressed his appreciation of Dr. Dark's paper, and thanked him for addressing the meeting. Dr. Hewitt then referred to Dr. Jaede's statement that to practise medicine in an industrial area had made a sociologist of him. Dr. Hewitt had had the same experience; he was practising in one of the worst slums in Sydney, and he had been there for a number of years. Dr. Hewitt said that he would like to take every doctor in the State into his area, to take them into the homes of the people, to show them the young children, bright, alert and full of promise, and then to show them the gradual process of slaughter of their mentality during the next ten or twelve years. By the time a child reached the age of fourteen years, his interest in cultural matters was just about killed. One or two more years were needed for him to learn how to spend his Saturday afternoons in the public houses, and then his life centred round the "three p's"—the "pubs", the "pitchers" and the "ponies". To watch that process made one a sociologist—it went further and made one a socialist. Dr. Hewitt did not think that sociological medicine could ever flower until medicine and industry were socialized. The great problem of removing wrong conditions was not a social or medical problem, it was an economic problem. Dr. Hewitt said that before the war he had watched his people trying to live on the basic wage, which was a minimum existence wage. It provided so much for food, so much for housing, so much for clothes, but not a penny more. Did these poor people deprive their children of an occasional trip to the surf, to the country *et cetera*? No. They did as other parents would do; they deprived themselves and their children of threepence here, sixpence there and a shilling somewhere else, in order to get the little bit of entertainment that the mind needed. But it was taken from the milk and the fruit and the butter and the shoes. The result was a stunting of the mentality. Dr. Hewitt hoped that later the section would attack the basic wage. He saw no hope for these unfortunate people. The basic wage might certainly be raised, but equally certainly the cost of living would increase *pari passu*. Dr. Hewitt said that he would answer Professor Lambie's question about the scope of sociological medicine; it was what confronted those members of the medical profession who realized the truth about the existing mental and physical and spiritual malnutrition. It was their duty to raise their voices, so that the standard of living of these people should be raised. Then perhaps doctors' surgeries would not be filled with people who had symptoms due to fear and to their unequal struggle against life.

DR. D. C. HENRY, in the course of his remarks, criticized the Association for its refusal to cooperate with the Government in the *Pharmaceutical Benefits Act* and said that he did not recall that the British Medical Association in Australia had ever instituted a movement to aid the poor and distressed. He thought it was nearly time that the Branch Council attended meetings to hear what the general practitioner had to say about things.

DR. S. G. SANDER said that he had listened with great interest to Dr. Dark's paper. He had also been interested to hear Dr. Winn say that the incidence of the psychoses in Soviet Russia had decreased, because in Australia the incidence of neuroses was increasing. That was obvious from all the forms of escapism in vogue—boogie-woogie, alcoholism, horror films. Many neuroses had their roots in a sense of frustration, because a large section of the community had to live under conditions which stunted their physical and spiritual growth. That state of affairs was not due to any lack of natural resources in the country; it was merely due to an economic policy which had proved itself unable to make use of the natural resources now available.

Dr. Dark, in reply, said that in his view the whole of medicine must gain a social conscience, and then it became a part of sociological medicine that would investigate diseases which sprang from social causes. Dr. Jaede had referred to the falling birth rate in capitalist countries; Dr. Dark agreed that the causes were economic causes. No one could say that parents were wrong to refuse to bring children into a world which might prevent them from making use of their talents or even deny them a living wage. Dr. Dark called attention to the fact that he had managed to write a whole paper without mentioning Russia; he had done it deliberately, because he had wished to avoid being accused of always using Russia to answer every argument. However, there came a time when it was impossible to leave it out any longer. When one was confronted with a world in two parts, one producing for private profit, the other producing for the benefit of the citizens, then it was impossible to avoid thinking about Russia. Since the revolution, the birth rate in Russia had increased; in Australia since that time it was decreasing. Dr. Dark suggested that the rising birth rate in Russia was due to the fact that in that country they had evolved an economy that allowed parents to bring forth children in hope. Dr. Winn had referred to a book on the neuroses; Dr. Dark said that the book was called "The Soviet Union Fights Neurosis". In that book the categorical statement was made that in every civilized community, where the economic system was capitalist in type, the incidence of neurosis was increasing, whilst in Soviet Russia it was steadily dropping. Serious students should study Australia's social economy and see how they could remove the causes of the falling birth rate. Dr. Dark said that he had been pleased to hear Professor Lambie say that he was teaching his students to look for social causes of disease. Surely one was entitled to hope that when the present generation of students had reached positions carrying some authority, they would be able to teach the importance of social medicine. Dr. Griffiths had pointed out that more than fifty years earlier Osler and others had stressed the social causes of disease; but all the British Medical Associations in the world had taken not the least notice of that teaching. If Osler were on earth at the present time, he would find that although fifty years earlier his teaching was right, it had not had much effect because of the faulty organization of medicine. Dr. Dark did not see how society could possibly find any alibi against its having been responsible for the appalling conditions in every city. When society would cling to an outmoded and provedly inefficient economic system, then it had to be held responsible. At the present time there were many workers in factories producing all kinds of things not needed in the community in peace time. Although 50% of the population was away from productive employment, Australians as a whole were living better than they had ever done before. The man receiving the basic wage was certainly better off than during the depression. That was because during the war emergency care had been taken that the goods produced were distributed with a certain degree of fairness. What would happen when the other 50% of the population returned to peace-time production? It was the duty of medicine to watch what happened, to investigate, to initiate research into the nation's economy and the nation's living standards, and then to see that the people got to know what the profession had found. It was no use simply to write articles on the subject in medical journals or to send the information to Cabinet, which might only "pigeon-hole" it if it raised inconvenient problems. The information must be given to

the people themselves. If it was found that the present set-up would not work, the people would have to deal with it. Referring to Dr. Henry's remarks, Dr. Dark said that some years previously he had read a report from Melbourne on some thousands of houses which had been investigated in 1913 and condemned as unfit for human habitation. Twenty-five years later the same houses were reexamined; they were simply twenty-five years worse and still being used. Most of them belonged to wealthy persons, churches and other organizations. The medical profession had done nothing about those houses—it had not seen that the whole of Melbourne knew about them. That showed how lacking the profession had been in sociological sense. Sociological medicine was not a separate part of medicine; its spirit should pervade the whole.

Dr. K. S. M. Brown, from the chair, thanked Dr. Dark for his interesting address; he said that Dr. Dark had given much thought to its preparation. Dr. Brown said that in the past not many medical men had found time apart from their actual medical work to delve into social questions. The time had come when they must think a great deal more about such matters. Individual members of the profession had thought about the social side of medicine throughout their work and in their own way had tried to adopt a preventive attitude to disease. Like George Bernard Shaw, Dr. Dark had found perhaps that not enough notice was taken except of overstatement. Overstatement usually produced an effect and made people take notice. A fruitful piece of research for the Section of Medical Sociology would be to investigate the work done in New South Wales by their Branch Council in this regard. Dr. Brown reminded those present of the existence of the Department of Medical Sociology of the New South Wales Branch of the British Medical Association, which had been working during the last four years, providing printed matter, broadcast talks *et cetera*. The Branch welcomed the foundation of the Section of Sociological Medicine. Excellent work could be done by its members if they would investigate all the questions that had been discussed. Once time and thought were given to these matters, the public would benefit greatly from their researches and from the publishing of what they found. If the members of the section had good suggestions to make, the Branch Council would do its best to do what they wanted it to do. In conclusion, Dr. Brown said that the discussion had been interesting, and he thanked all who had taken part in it.

NOTICE.

THE General Secretary of the Federal Council of the British Medical Association in Australia has announced that the following medical practitioners have been released from full-time duty with His Majesty's Forces and have resumed civil practice as from the dates mentioned:

Dr. H. Boyd Penfold, 81, Collins Street, Melbourne (November 4, 1944).

Dr. Lance S. Corner, 135, Macquarie Street, Sydney (December 15, 1944).

Special Correspondence.

LONDON LETTER.

By OUR SPECIAL CORRESPONDENT.

By the time this letter appears negotiations between the Minister of Health and the elected representatives of the British Medical Association on the Government's proposals for a national health service as embodied in the White Paper will actually have been commenced. There has been much delay in establishing this contact. First, the then Minister of Health threw his original proposals "into the discard" because they were so utterly impossible of acceptance by the medical profession. He next announced the Government's intention to formulate its own proposals and to publish them in the form of a White Paper. Promised for July, 1943, the White Paper did not make its appearance until the spring of 1944. As the British Medical Association was left in complete ignorance of the nature of these proposals, the Council was powerless to ascertain the wishes of its constituents, so there was more delay. Once, however, the Government's proposals were made known publicly, the

Council, Branches and Divisions sprang into a feverish activity. Meetings have been held all over the medical country to which even non-members of the Association have been invited. Innumerable resolutions, condemnatory and otherwise, have been discussed and passed; the Council's attitude made known; a questionnaire, largely useless, on the Government's proposals issued to over 50,000 doctors, so at long last the British Medical Association has been able to hold its Annual Representative Meeting for a final determination of the profession's attitude to the problem of a State medical service. This meeting, which should have taken place in July, 1944, was postponed at the request of the Minister of Health until December 5-8, 1944, on account of the intervention of D-day.

The meeting was held in London and was attended by about 250 representatives, who were most assiduous in their attendance and vocal in their opinions. It was at once apparent that the profession everywhere had given the closest attention to the proposals of the White Paper and the Council's recommendations thereon and had been given very precise instructions from their constituents on how to vote and what to say and had come provided with 390 motions or amendments to the Council's report as published in the *British Medical Journal*. The die-hards were at once to the fore.

The very first motion, number 15 on the agenda, proclaimed "that this meeting disapproves of a comprehensive medical service as envisaged in the White Paper and is of the opinion that consideration of the matter should be postponed till after the war". Had this been carried the proceedings would have died an early and premature death, and an implacable government would have proceeded with its proposals for a national health service and the "regimentation" of the profession without any further reference to it. Fortunately common sense prevailed and the motion was heavily defeated. On the vexed question of whether a comprehensive medical service should be provided free and gratis for everybody—though the word "free" is a misnomer—as the Government proposes, or only for those whose income is below £450 per annum, as the profession would prefer, that is, the 100% to 90% issue, there was, and still is, a great and abounding diversity of opinion. A motion that the Association does not oppose the 100% principle provided that private practice is maintained for those who desire it was defeated by 147 votes to 80. Eventually decision was deferred pending further information from the negotiating committee's discussions with the Ministry of Health.

On two other important problems there was absolute unanimity. The medical profession in this country will not accept control by any local authority, and if a Central Medical Board be established it should be composed entirely of medical men. The subject of compensation for any medical practice which may be engulfed in the wreckage achieved by a comprehensive medical service was obviously a very sore point with many practitioners, so an amendment to the Council's recommendations moved by the representative of Hendon in the best speech of the meeting, "that it is in the national interest and essential to the independence of the profession that doctors should continue to own the goodwill of their practices", was carried with enthusiasm. So for three full working and talking days the debate went on. Amendment and counter amendment, motions flatly contradicting each other, but all characterized by more earnestness than enthusiasm. It is not necessary for your correspondent to labour the question. The *British Medical Journal* will do that in considerable detail. It may, however, suffice to say that from a disinterested observer's point of view of the whole of the proceedings, the general attitude of the profession to the Government's proposals was summed up by the speaker who observed that the principle underlying the White Paper was sound, but the methods abominable. Incidentally the New Zealand refund system, Type B, did not commend itself to anybody but the mover of the motion recommending it. The meeting was certainly the most important ever held by the British Medical Association, and its repercussions will be felt throughout the British Empire, at least wherever doctors are to be found. Australasian members of the profession would be well advised to study all subsequent proceedings, as they will be reported in the *British Medical Journal* with great care. The practice of medicine is confronted with a revolution.

Two unusual features of this Annual Representative Meeting may be briefly mentioned. The proceedings were filmed for the "March of Time", so it is not improbable that Australian doctors may have the privilege of seeing and hearing the Chairman of Council, Dr. H. Guy Dain, moving that "paragraph 49 of the Council's Report be approved".

The thunders of applause with which this motion was received were very specially arranged and recorded. At the request of one of the Australian representatives on the Central Council Dr. Dain concluded the discussion on the White Paper proposals by a brief summary of the main decisions of the meeting, a novelty which was much appreciated by representatives and Press alike. Lastly, the attitude of the lay Press may be summed up as plenty of publicity but little sympathy.

Correspondence.

BELL'S PALSY.

SIR: Recently I have noticed a small epidemic of Bell's palsy in this district. This would seem to indicate that this complaint is due to a virus and not to the "colds" so often repeated in text-books. As there has been a large epidemic of chickenpox with a few cases of shingles, Bell's palsy may be due to a like virus.

Yours, etc.,

F. W. SIMPSON.

Wembley Park,
Western Australia.
December 19, 1944.

Post-Graduate Work.

FILM EVENING AT SYDNEY.

THE New South Wales Post-Graduate Committee in Medicine announces that a film evening will be held at the Stawell Hall, Royal Australasian College of Physicians, 145, Macquarie Street, at 8 o'clock p.m. on Wednesday, February 14, 1945. The films to be shown are as follows:

- "The Making of Films" (Dr. R. S. Godsall).
- "The Treatment of War Wounds with Penicillin in North Africa and the Middle East" (Sir Howard Florey).
- "Shock" (prepared by the National Research Council of Canada).

The first of these, "The Making of Films", has been kindly presented to the committee by Dr. Godsall.

There will be no charge for admission and anybody requiring further information should communicate with the Secretary of the Post-Graduate Committee, 131, Macquarie Street, Sydney. Telephone B 4606.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 247 and 252, of December 14 and 20, 1944.

CITIZEN NAVAL FORCES OF THE COMMONWEALTH.

Royal Australian Naval Reserve.

Termination of Appointment.—The appointment of Henry Norman Burgess Wattenhall as Surgeon Lieutenant is terminated, dated 17th April, 1944.

ROYAL AUSTRALIAN AIR FORCE.

Citizen Air Force: Medical Branch.

The following Flight Lieutenants are transferred from the Reserve to the Active List with effect from 10th November, 1944: M. Bell (267408), H. R. Harris (267518), J. E. Knight (267548), N. Kerkenezov (267618).

The probationary appointment of Pilot Officer G. J. Snowball (84921) is confirmed and he is promoted to the rank of Flying Officer with effect from 25th September, 1944.

Temporary Squadron Leader N. W. Martin (272869) is granted the acting rank of Wing Commander whilst occupying a Wing Commander post with effect from 1st November, 1944.

Reserve: Medical Branch.

The following medical practitioners are appointed to commissions on probation with the rank of Flight Lieutenant with effect from 16th October, 1944: Edwin Henry Jan (275523), Robert Thomas Galbally (257704), Zelman Samuel Freeman (267770).

Temporary Wing Commander D. S. Thomson (251195) is transferred from the Active List with effect from 27th October, 1944.—(Ex. Min. No. 316—Approved 13th December, 1944.)

CASUALTIES.

According to the casualty list received on January 5, 1945, Captain N. L. Hall, A.A.M.C., South Brisbane, has been placed on the "seriously ill" list.

Obituary.

WILLIAM JOHN McLAREN-ROBINSON.

HAVING graduated in medicine at the University of Melbourne in 1937, William John McLaren-Robinson entered the medical service of the Royal Australian Navy. He had served for two years as surgeon-lieutenant when he was reported missing after the sinking of His Majesty's Australian Ship *Yarra* in March, 1942. Survivors have reported that he was in the casualty clearing station when the ship was struck and that he refused to leave the sick-bay attendants who were at work trying to remove casualties from the sick-bay in an effort to save them. That this gallant officer upheld the undying traditions of the Navy and its medical service will, we trust, be of some comfort to his wife and small son, to whom the sympathy of many friends and colleagues has been extended.

LESLIE UTZ.

We regret to announce the death of Dr. Leslie Utz, which occurred on December 22, 1944, at Sydney.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Walsh, John Owen, M.B., B.S., 1934 (Univ. Sydney), 9, Kurrajong Avenue, Leeton.

Australian Medical Board Proceedings.

QUEENSLAND.

THE undermentioned has been registered, pursuant to the provisions of *The Medical Acts, 1939 to 1940*, of Queensland, as a duly qualified medical practitioner:

Deane-Butcher, James, M.B., B.S., 1939 (Univ. Sydney), King Street, Warwick, Queensland.

Books Received.

"*Fye's Surgical Handicraft: A Manual of Surgical Manipulations, Minor Surgery, and other Matters Connected with the Work of Surgical Dressers, House Surgeons and Practitioners*", edited by Hamilton Bailey, F.R.C.S., England; Fourteenth Edition, fully revised; 1944. Bristol: John Wright and Sons Limited. 81" x 5½", pp. 639, with many illustrations, some in colour. Price: 25s. net.

"*Tropical Medicine*", by Sir Leonard Rogers and Sir John W. D. Megaw; Fifth Edition; 1944. London: J. and A. Churchill Limited. 9½" x 6", pp. 527, with illustrations. Price: 21s.

"*Ventures in Science of a Country Surgeon*", by Arthur E. Hertzel, M.D.; 1944. 9" x 6", pp. 302, with illustrations.

"*Studies on Immunisation: Second Series: With Appendices dealing with Anti-typhoid Inoculation, Chemo-therapy, and Statistical and other Operations of Induction*", by Sir Almroth E. Wright, M.D., F.R.S.; 1944. London: William Heinemann (Medical Books) Limited. 9½" x 7½", pp. 262, with illustrations. Price: 25s. net.

"*Surgery: A Textbook for Students*", by Charles Aubrey Pannett, B.Sc., M.D., F.R.C.S.; 1944. London: Hodder and Stoughton Limited. 10" x 6½", with many illustrations. Price: 35s. net.

"*Local Anæsthesia: Brachial Plexus*", by R. H. Macintosh, M.A., M.D., F.R.C.S., D.A., and William W. Mushin, M.B., B.S., D.A., illustrated by Miss M. McLarty; 1944. Oxford: Blackwell Scientific Publications Limited. 7½" x 5", pp. 59, with illustrations. Price: 10s. 6d. net.

"*Aids to Clinical Pathology, including Post-Mortem Technique*", by David Haler, M.B., B.S. (Hon.) London, D.C.P. London; 1944. London: Baillière, Tindall and Cox. 6½" x 4", pp. 364, with illustrations. Price: 6s.

Diary for the Month.

- JAN. 26.—Queensland Branch, B.M.A.: Council Meeting.
 FEB. 2.—Queensland Branch, B.M.A.: Branch Meeting.
 FEB. 6.—New South Wales Branch, B.M.A.: Organization and Science Committee.
 FEB. 6.—New South Wales Branch, B.M.A.: Special Groups Committee.
 FEB. 7.—Western Australian Branch, B.M.A.: Council Meeting.
 FEB. 9.—Queensland Branch, B.M.A.: Council Meeting.
 FEB. 13.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
 FEB. 20.—New South Wales Branch, B.M.A.: Medical Politics Committee.
 FEB. 23.—Queensland Branch, B.M.A.: Council Meeting.
 FEB. 27.—New South Wales Branch, B.M.A.: Ethics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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